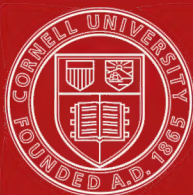


SB
407
H62
2nd ser.



Cornell University Library

The original of this book is in
the Cornell University Library.

There are no known copyright restrictions in
the United States on the use of the text.

FAMILIAR GARDEN FLOWERS

FIGURED BY

F. EDWARD HULME, F.L.S., F.S.A.

AND DESCRIBED BY

SHIRLEY HIBBERD

“The generous glebe
Whose bosom smiles with verdure, the clear tract
Of streams delicious to the thirsty soul,
The bloom of nectar'd fruitage ripe to sense,
And every charm of animated things,
Are only pledges of a state sincere,
The integrity and order of their frame,
When all is well within, and every end
Accomplish'd. Thus was Beauty sent from Heaven,
The lovely mistress of truth and good
In this dark world: for truth and good are one,
And Beauty dwells in them and they in her,
With like participation.”

AKENSIDE, *Pleasures of the Imagination*, I. 364-76.

Second Series

WITH COLOURED PLATES

★ ★

CASELL AND COMPANY, LIMITED
LONDON, PARIS & MELBOURNE

ALL RIGHTS RESERVED

SP

407

H62

2nd acc.



PREFACE.

THE completion of a Second Series of "FAMILIAR GARDEN FLOWERS" may suggest to some readers that suitable subjects will now be growing scarce. But there will be no scarcity even when the Third Series is completed; and it matters not how far we proceed, there will still be suitable subjects remaining, so vast is the field in which these humble labours are pleasantly prosecuted, and so infinite the variety of beautiful and familiar garden flowers. We are still only on the threshold of the temple of Flora, and in the Third Series, therefore, we shall be enabled, without difficulty, to present a selection differing entirely from those in the two series now completed; and we look for augmentation rather than diminution of public interest, both in the flowers themselves and in our humble endeavours to present their portraitures truthfully.

S. H.

CONTENTS.

	PAGE
CROWN IMPERIAL	1
ORIENTAL POPPY	5
CRASSULA	9
SNAPDRAGON	13
FOXGLOVE	17
CINERARIA	21
GARLAND DAISY	25
JAPAN QUINCE	29
ESCHSCHOLTZIA	33
SCARLET GERANIUM	37
POPPY ANEMONE	41
ABUTILON	45
ROSE OF SHARON	49
CRIMSON MALLOW	53
LABURNUM	57
ROSE	61
TULIP	65
POLYANTHUS	69
PENTSTEMON	73
DOUBLE PRIMROSE	77
WILD GERANIUM	81

	PAGE
GARDEN AVENS	85
RANUNCULUS	89
CORONILLA	93
YELLOW COLUMBINE	97
TANSY	101
STAR OF BETHLEHEM	105
IXIA	109
YELLOW JASMINE	113
CORNFLOWER	117
SINGLE STOCK	121
LADY'S SLIPPER	125
IVY-LEAVED GERANIUM	129
LARKSPUR	133
MOUNTAIN ANEMONE	137
MEZEUREON	141
ABYSSINIAN PRIMROSE	145
MINIATURE MALLOW	149
SHOWY FEVERFEW	153
PERSIAN CYCLAMEN	157

SYNOPSIS.

• • • —

THE notes which follow are on the same plan as in the synopsis of the First Series. In the light sketches of which the work consists scientific details would be out of place, and yet may sometimes be desired by the reader. By bringing together, apart from the descriptions of the plates, a few elementary particulars of the relationships of the plants figured, as well as of their structure and uses, this synopsis may serve some useful purpose, although it is made as brief and unobtrusive as possible.

CROWN IMPERIAL, or FRITILLARIA. The disposition of the flowers explains the familiar name. The botanical name is from *fritillus*, a chess-board, in allusion to the chequered colouring of some species, more especially *F. meleagris*. N.O., *Liliaceæ*. LINNÆAN: 6, *Hexandria*; 1, *Monogynia*.—To say that the fritillary is a liliaceous plant is like saying it is a vegetable plant, for the lily family is so vast that this comparatively humble flower seems lost in it. There are nearly 150 genera and quite 1,200 species of liliaceous plants, and they comprehend such diverse subjects as true lilies, tulips, dracænas, aloes, squills, asparagus, onions, the New Zealand flax, and the Australian grass-tree. It will be seen, therefore, that the order comprises herbs, shrubs, and trees, with bulbous, tuberous, and fibrous roots, and of the most varying aspects imaginable. But they agree in having flowers in which calyx and corolla are generally confounded and coloured alike, the flowers being usually six-divided with six stamens and a three-celled ovary. It is a magnificent family that no botanist has studied sufficiently, and that will surely be some day broken up and put in order, for it cannot be doubted that as it now stands it is made up of incongruities. The position of the fritillary in the order is with the lilies and tulips, to which it is obviously allied by the form of the flowers and the herbaceous growth and bulbous root.

p. 1.

ORIENTAL POPPY. See under “*Eschscholtzia*.”

p. 5.

CRASSULA, from Lat. *crassus*, thick, in allusion to the succulent leaves. N.O., *Crassulacæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—The crassula or stonecrop family comprises plants that are herbaceous, woody, and succulent. The leaves are alternate or opposite, sometimes ternate or

unequally pinnate, without stipules; flowers hermaphrodite, regular; the calyx with five lobes usually, but sometimes with as many as twenty; corolla consisting of petals equal in number to the lobes of the calyx; stamens five to ten; ovaries free, equal in number to the petals; fruit composed of many-sided carpels, to the inner sutures of which the seeds are attached. In *echeveria* the corolla is in one piece, deeply divided, and the stamens are united to it. A quite unimportant order, though renowned for the beauty of its flowers. p. 9

SNAPDRAGON, or ANTIRRHINUM. N.O., *Scrophulariaceæ*. LINNÆAN: 14, *Tetradynamia*; 2, *Angiospermia*.—See summary under “*Mimulus*.” p. 13.

FOXGLOVE. The familiar name is explained in the essay. The botanical name *Digitalis* means finger-stall or “glove,” which may appear to give propriety to the popular name. N.O., *Scrophulariaceæ*, or Figworts. LINNÆAN: 14, *Didynamia*; 2, *Angiospermia*.—In this large and important order are many curious and beautiful plants, not a few of them characterised by distinct toxic qualities. The foxglove, snapdragon, calceolaria, mullein, mimulus, and veronica are perhaps the best known amongst many, but more for their beauty as garden flowers than for their medical uses, although *digitalis* is a plant of considerable importance in modern medicine. They are mostly to be classed under herbs and shrubs, but the noble *pawlonia* is an example of the trees of the order, and the *buddleia* is intermediate between the trees and the shrubs. The *catalpa* is sometimes classed with the figworts, but its proper place is with the *bignoniads*. Another plant often associated in this group is the *gloxinia*, but this is a member of the *gesneriworts*, and therefore it is scarcely allowable to speak of the foxglove—as it is sometimes spoken of—as the “British *gloxinia*.” The common foxglove is the best plant of its genus; other species of *digitalis* must rank below it, but a few of the number are interesting, more especially *Digitalis aurea*, the yellow flowering foxglove, a native of Greece. p. 17.

CINERARIA, from *cineres*, ashes, in allusion to the grey down on the leaves of many species. N.O., *Compositæ*, or *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 2, *Superflua*.—See summary under “*Aster*.” p. 21.

CHRYSANTHEMUM, from Greek *chrysaos*, gold, and *anthos*, a flower. N.O., *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 2, *Superflua*.—For summary see under “*Aster*.” p. 25.

JAPAN QUINCE, or PYRUS JAPONICA. Name from *pyrus*, a pear, as in Virgil and Pliny; but it is difficult to avoid the suggestion of something fiery, such as we have in the brilliant flowers of this plant, which, we may suppose, was quite unknown to the ancients. The pear as known in Europe cannot be spoken of as a fiery tree, and it is not often the fruits of the pear are highly coloured. The quince was known to the Greeks as *kudonia*, hence the modern botanical distinction, the Japan quince being more properly classed as *Cydonia Japonica*, although best known under the generic distinction of *Pyrus*. As for the familiar word *pear*, that is true English, having come down to us from the Saxon with scarcely any change. The pears, quinces, and apples belong to the pomaceous section of the great

family of roses. In this same section occur the medlars, sorbs, and haws. In other sections of the family we find the peaches, cherries, and plums; and again in others, the strawberries, raspberries, and blackberries, and mixed variously with these are true rosaceous plants that do not produce edible fruits. For example, the spiræas, potentillas, and agrimonies are rosaceous plants; but they do not commend themselves to our attention in so striking a manner as the pears, plums, cherries, and peaches. p. 29.

ESCHSCHOLTZIA. Named in honour of Dr. Eschscholtz, an eminent botanist. N.O., *Papaveraceæ*. LINNÆAN: 13, *Polyandria*: 4, *Tetragynia*.—The poppyworts are mostly herbs, but a few are sub-shrubby; all contain a milky narcotic or acrid juice. The leaves are alternate, more or less divided, usually widened at the base, and half clasping the stem; flowers hermaphrodite, usually regular; calyx with two or three pieces, which fall as the flower expands; corolla of four or five petals, much crumpled before expanding; stamens indefinite in number; ovary distinct; fruit a dry, many-seeded, spherical, or cylindrical capsule, or an elongated pod opening by two membranous valves. A small but important order, comprising the poppy, greatcelandine, bocconia, sanguinaria, platystemon, etc. Most of the members of this order possess decided chemical properties, and are more or less poisonous. The poppy is the most renowned in this respect from its production of the powerful narcotic opium, a great blessing and also by misuse a great curse to the human family. p. 33.

PELARGONIUM, from *pelargos*, a stork, in reference to the form of the fruit before the seeds separate. N.O., *Geraniaceæ*. LINNÆAN: 16, *Monodelphia*: 4, *Heptandria*.—This order is of great extent and importance, and deserves careful study. The order may for present purposes be divided into three sections—the Pelargoniums, or stork's-bills, which have irregular flowers; the Geraniums, or crane's-bills, which have regular flowers, with ten stamens; and the Erodiums, or heron's-bills, which have five stamens. The showy plants of our gardens are pelargoniums, and mostly natives of Southern Africa. The British species of the order are true geraniums or erodiums, one of the loveliest being the blue geranium (*G. pratense*) of our wet pastures and sheltered valleys. All the plants of this order are herbs or soft-textured shrubs; many have velvety fragrant leaves; and the flowers usually consist of five pieces, which in the pelargonium are of unequal sizes, but in the geranium are all of the same size. The fruit is dry, sometimes awned, owing to a feathery growth of the styles, and this structure favours their transport by the wind. The order has no place in tropical vegetation; but many of the species are found in the warmer temperate climes, and most of them affect open prairie lands where they are fully exposed to solar light. In their properties they are astringent and balsamic, and a few are of importance in the arts. Their exceeding beauty and almost endless variety entitle them to the highest consideration of the garden botanist. p. 37.

POPPY ANEMONE. The generic term *Anemone*, or wind-flower, is from *anemos*, the wind, or from the river Anemo, that flowed past the city of Ravenna, where probably anemones grew abundantly in ancient times. In its relationships the anemone comes near to the ranunculus. One of its peculiarities is an involucre of three pieces usually distinct from the flower, and there is no pore or nectary as in the ranunculus. p. 41.

ABUTILON. From the Greek for mulberry-tree, which the larger kinds of abutilon resemble; or from the Arabic for mallow. N.O., *Malvaceæ*. LINNÆAN: 16, *Monodelphia*; 8, *Polyandria*.—The malvaceous order comprises herbs, shrubs, and trees, with regular showy flowers, usually with five divisions, but sometimes with three or four. The petals are spirally twisted before the flowers open, and they are united by their claws to the base of the tube formed by the union of the filaments, so that the corolla falls off entire. The stamens are curiously united by their filaments into a tube, within which is the style. The ovary consists of numerous carpels arranged in a whorl. The fruit is a cluster of seed-vessels arranged around a central axis. In this order we find the mallow, hibiscus, sida, the cotton-plant, or gossypium, and the abutilon. p. 45.

HYPERICUM, possibly from Greek *hyper*, over, and *creike*, heath, a plant growing on a heath. The name is certainly from the *Iperikon* of Dioscorides and Hippocrates, who were acquainted with *Hypericum crispum* and *H. empetrifolium*, and advised their employment in complaints of the chest. N.O., *Hypericaceæ*. LINNÆAN: 18, *Polyadelphia*; 2, *Polyandria*.—The plants of this order are herbs, shrubs, and trees, the best known amongst them being the tutsan of the hedgerows. Leaves simple, entire, opposite, full of pellucid and black dots; flowers hermaphrodite, regular; calyx usually of five pieces, the two outer smaller than the three inner; corolla of five petals; stamens indefinite, united at their base into bundles; ovary free, globular; fruit a dry or fleshy capsule of many valves; seeds small, tapering, with an inferior radicle. A small and unimportant order, comprising St. John's wort, parnassia, elodea, and the gum gutta, or American gamboge. p. 49.

MALOPE, from *malos*, soft, in allusion to the texture of the leaves and the emollient properties of the plants. N.O., *Malvaceæ*. LINNÆAN: 16, *Monadelphia*; 8, *Polyandria*.—The mallows are endogenous plants, comprising herbs, shrubs, and trees, with simple leaves which are usually lobed, and with showy flowers which, with very few exceptions, have five sepals and five petals. The recognition of mallow worts by the beginner in botany is extremely easy, as the family likeness is preserved all through in a conspicuous way. The manner in which the flowers are spirally twisted before they expand is peculiar, and the union of the filaments of the stamens into a tube which sheathes the style is equally peculiar and characteristic. The ovary consists of numerous carpels arranged in a whorl around a central axis; they are one-celled; the seeds are somewhat three-sided, and are sometimes covered with a cottony down. In this family we find the mallow, the hibiscus, the hollyhock, the cotton plant, the sida, and the abutilon, all more or less "familiar" flowers. The silk cotton tree (*Bombax*) is closely related to the mallows, although properly placed in a separate order. It is from its seed-vessels that the soft fibre is derived, precisely as in the common cotton (*Gossypium*), which is strictly malvaceous. p. 53.

LABURNUM, "from *labor*, denoting what belongs to the *hour* of *labour*, and which may allude to its closing its leaflets together at night, and expanding them by day." This explanation by Dr. Prior is so unacceptable that we prefer Professor Skeat's declaration that the derivation is unknown. *Cytisus laburnum* belongs to N.O. *Fabacæ*, or *Leguminifera*. LINNÆAN: 17, *Diadelphia*; 4, *Decandria*.—See summary under "Sweet Pea." p. 57.

ROSA, from *rhod*, red, is *par excellence* the name of a red flower; and it follows that rhododendron means a red-flowering tree. A very considerable proportion of the plants that are classed with the roses have white flowers, and thus the term is enlarged in its purport, and when considered scientifically loses all its relationship to colour. N.O. *Rosaceæ*. LINNÆAN: 12, *Icosandria*; 1, *Polygynia*.—The roseworts have distinct prevailing characters by means of which they may, for the most part, be readily recognised by the student of botany, but a few genera will, perhaps, occasion momentary perplexity. Rosaceous plants are herbs, shrubs, or trees; they have leaves simple and leaves compound, as, for example, the apple and pear have simple leaves, and the rose, the spiræa, the strawberry, and the potentilla usually have compound leaves. The flowers are mostly hermaphrodite; but exceptions occur, as, for example, in some kinds of strawberries, in which the male and female flowers are on separate plants. A common character is to be found in the regularity of the flowers, which, however various under cultivation, may be described as usually composed of five sepals and five petals, with stamens indefinite in number, inserted with the petals. The fruits are more various than the flowers. In the rose it is a "hép" or berry, in the apple it is a "pome," in the strawberry and raspberry it is a swollen receptacle in which the seeds are imbedded. For the determination of rosaceous plants the flower is of the first importance; but it is no easy matter to determine them. An apple-tree, a bramble-bush, a meadow-sweet, and a cherry are all of them rosaceous plants, and perfectly wholesome, casually considered, although from a very considerable number of them we may obtain that most deadly of poisons—prussic acid. The most important of the rosaceous plants are our hardy fruits, comprising the apple, pear, plum, cherry, peach, almond, strawberry, raspberry, bramble, and sloe. But these, though known as "fruits," are widely separated in the order, the pomes being so far removed from the berries that they might well be classed in separate orders. Interesting plants for the wayside botanist are the agrimony and the potentilla, which do not readily declare themselves as rosaceous. As for the true roses, they are unmistakeable, and as types of the order they are not less important than as types of beauty. p. 61.

TULIP, from *tulipan*, Turkish for turban. N.O., *Liliacæ*. LINNÆAN: 6, *Hexandria*; 1, *Monogynia*.—See summary under "*Lilium*." p. 65.

POLYANTHUS, or **PRIMULA**, from Greek *polus*, many, and *anthos*, a flower; the flowers being in umbels on the summit of a common stem, as distinguished from those of the primrose, which appear singly on separate stems. The generic name *primula* is from *primulus*, the beginning, referring to the early appearance of the flowers in spring. N.O., *Primulacæ*. LINNÆAN: 5, *Pentandria*; 1, *Monogynia*.—Annual or perennial herbs with radical leaves and regular flowers. Calyx usually with five divisions or lobes; corolla in one piece, with usually five lobes; stamens equal to the number of the lobes, and opposite to them; style and stigma simple; fruit one-celled, many-seeded. A comparatively unimportant family, best known for the beautiful flowers it contributes to our fields and gardens. p. 69.

PENTSTEMON, from *pente*, five, and *stemon*, a stamen. N.O., *Scrophulariaceæ*. LINNÆAN: 14, *Dialygamia*; 2, *Angiosperma*.—For notes on the order see under "*Mimulus*." p. 73.

PRIMULA.—See “*Polyanthus*.” p. 77.

GERANIUM.—See under “*Pelargonium*.” p. 81.

AVENS.—See under “*Geum*.” p. 85.

RANUNCULUS, from *rana*, a frog, the plants that give a general name to this order being found in meadows and marshes, as is the case with our common buttercup.—They are familiarly known as *crowfoots*, but this is a subtle designation, no resemblance to the foot of a crow being traceable in either leaves or flowers. It happens, however, that Dioscorides named a plant the coronopus or crow’s foot, and this has been identified as the ranunculus, but why and how we confess we cannot say, unless it be that the leaves of the marsh and meadow species are occasionally stained with blackish patches that fancy may convert into footprints. The plants of this order are mostly herbaceous, the leaves are usually much divided, and the leaf-stalk in some degree clasps the stem. Although the flowers vary to an immense extent in form and colour, they are generally conspicuous and beautiful; even our common buttercup is one of the loveliest of flowers, and the hellebore, clematis, anemone, and delphinium illustrate the floral importance of the family. This is a poisonous family, with watery juices, the leading characteristics being causticity and acidity. One species of buttercup is named *Ranunculus acris* on account of the acrid property of its watery juice. The common monkshood (*Aconitum napellus*) is much to be feared as a poisonous plant, because its roots have often been served as horse-radish and have proved fatal to those who have eaten them. This plant, indeed, should be excluded from gardens, notwithstanding that it is a noble adornment of the shrubbery border. It is interesting to find in a family so notorious for their noxious properties an agreeable and wholesome fruit called the May-apple or wild lemon, the produce of *Podophyllum peltatum*, but all other parts of this plant are poisonous, and the root is well known in medicine. p. 89.

CORONILLA, from *corona*, a crown or garland. N.O., *Leguminosæ* or *Fabacæ*. LINNÆAN: 17, *Diadelphia*; 4, *Decandria*.—The immense order of fabaceous plants, formerly known as the Papilionaceæ, or butterfly flowers, is of great importance in all the ways in which plants “come home to us.” They supply many kinds of food and medicine, materials for the manufacturer, fine features in scenery, and gay flowers in the garden. When the bees “hum about globes of clover and sweet peas” they tell us in glad language that the butterfly flowers are prolific of honey, and they show how perseverance overcomes obstacles, for if the bees cannot force their way into the flowers they gnaw holes in them and thus secure the sweet booty. There are about 467 genera and 6,500 species of papilionaceous plants, and they range in stature and importance from the alpine oxytropis, three inches high, to the gigantic and gorgeous amherstia of the Indian forests and the locust-trees of the western continent, some of which Martius has estimated to be as old as the time of Homer or earlier. The typical flower and fruit are well known, and the common pea represents the order admirably. But the exceptions to the typical style are numerous. However, this curious fact comes into the story, that it is quite unusual for a truly leguminous plant to depart from the type in both flowers and fruits; it is the rule that if the flowers change the pods remain, and *vice versâ*. Another common character

is the divided leaf; but to this also many exceptions occur. The first point, however, that should have attention in the study of this order is the construction of the flower, which offers its own peculiar commentary on the Darwinian doctrine that requires flowers to be fertilised with pollen not of their own producing, or, in other words, the doctrine that degeneracy must follow upon self-fertilisation. Generally speaking, no doubt, they are self-fertilised. This order is prolific of flowers, but very few double flowers occur; those we call to mind at the moment are *Genista tinctoria*, *Spartium junceum*, *Ulex Europæus*, *Lotus corniculatus*, *Orobis vernus*, and *Wistaria sinensis*, the last producing occasionally two ovaries. p. 93.

AQUILEGIA, from *aquila*, an eagle, the flower often bearing a resemblance to a bird. The garden name of Columbine has a similar meaning, referring to a fancied resemblance of the flower to a pigeon. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*: 5, *Pentagynia*. p. 97.

TANSY. The name is explained in the text. N.O., *Asteraceæ*, the Starworts or Composites. LINNÆAN: 19, *Syngenesia*: 2, *Superflua*.—The place of the tansy in the enormous order of the composites is with the artemesia, or wormwood, which it resembles in leafage and in aromatic properties. In this section the florets of the disc are always hermaphrodite, those of the ray pistillate. The leaves of the tansy contain a volatile oil, a fat, a resin, and a peculiar acid called tanacetie acid. The costmary, or *Pyrethrum tanacetum*, has similar properties, and formerly was held in high repute as an antispasmodic. The fragrant tarragon, so much prized by the eclectic salad-maker, is a member of the wormwood genus, as its name, *Artemisia dracunculus*, indicates. Another near relative is the southernwood (*Artemisia abrotanum*), a plant once much prized for promoting perspiration in catarrhal fevers, but now best known as a fragrant (and sometimes flagrant) enricher of a rustic nosegay. The common wormwood (*Artemisia vulgaris*), formerly in high renown for medicinal purposes, has of late been re-introduced to the catalogue of useful curative plants, being used as a remedy for epilepsy. p. 101.

ORNITHOGALUM, from *ornis*, a bird, and *gala*, milk. N.O., *Liliaceæ*, or Lilyworts. LINNÆAN: 6, *Hexandria*: 1, *Monogynia*.—The star of Bethlehem belongs to the hyacinth group of liliaceous plants, having for associates the muscari, eucomis, allium, and the very lovely chinodoxa. The hyacinth and the scilla are, however, the two most important members of this section. p. 105.

IXIA, from *ixia*, bird-lime, the plant having a clammy juice. N.O., *Iridaceæ*. LINNÆAN: 3, *Triandria*: 1, *Monogynia*.—All the irids are herbs with tuberous or fibrous roots, alternate leaves, which are often sheathing at the base. The flowers are regular or irregular, three or six divided, the fruit a three-celled capsule. The members of the order are widely scattered, flourishing splendidly in the southern hemisphere, more particularly the Cape of Good Hope. *Ixia*, *sparaxis*, *tritonis*, and *Watsonia* are relations, and require nearly the same management, being fairly hardy near London, but braving all seasons in the Channel Islands, more particularly in Guernsey. p. 109.

JASMINUM, from the Arabic *Ysmyu*. N.O., *Jasminaceæ*. LINNÆAN: 2, *Diandria*: 1, *Monogynia*.—The members of this interesting order are free-growing shrubs, many of them having twining stems; the leaves are

opposite or alternate; the flowers are white or yellow, and often sweet-scented. The corolla appears to consist of five pieces, but in reality consists of one only, which, like that of the primula, is contracted to a tube below and expanded into a "limb" above, with lobes that to the casual eye are as distinct petals. The jasmines and olives are near relations, but botanists keep them separate, for the oliveworts have irregular flowers and deeply-lobed fruit. The Jasmines are mostly Asiatic, but there are a few natives of America and Africa, while the Australian continent is not without them, and the south of Europe can claim two. The chief producers of the essential oil of jasmine are only three in number: they are *Jasminum officinale*, the common white; *J. grandiflorum*, the large-flowered Indian; and *J. sambac*.
p. 113.

CENTAUREA, from *centaury*, a plant fabled by Ovid to have caused a wound in the foot of Chiron, one of the horse-breakers of Thessaly. N.O., Composites, or *Asteraceæ*. LINNÆAN: 19, *Syngenesia*; 3, *Frustranea*.—For general characters see under "Aster."
p. 117.

MALCOMIA. Named after W. Malcom, mentioned by Ray. N.O., *Cruciferae*. LINNÆAN: 15, *Tetradynamia*.—See notes under "Wall-flower."
p. 121.

CYPRIPEDIUM, from *Kypris*, Venus, and *podion*, a slipper. N.O., *Orchidaceæ*, or Orchids. LINNÆAN: 20, *Gynandria*; 1, *Monandria*.—The immense family of orchids has a few common and very striking characteristics which in structural detail undergo endless modifications, so that we are continually called on to account for appearances that when understood prove to be but variations of the strongly declared primary structure. The plants are herbs or shrubs, the latter usually having a climbing habit. The leaves are always simple and arise directly from the stem, or from swollen stems called pseudo-bulbs. The flowers are irregular and consist of a series of five threes, making fifteen parts in all, whereof frequently some are suppressed and others enormously developed. The special structure of the cypripedium is explained in the text.
p. 125.

PELARGONIUM, from *pelargos*, a stork, in reference to the shape of the seed-pod, which resembles a stork's bill. N.O., *Geraniaceæ*. LINNÆAN: 16, *Monodelphia*; 4, *Heptandria*.—This interesting order consists of soft-stemmed shrubs and herbs which may be grouped in two great divisions. In one division we have the true geraniums, which are distinguished by the regularity of the corolla, as may be seen in such beautiful British plants as *Geranium pratense* and *G. sanguineum*. In the other we have the true pelargoniums, which have an irregular corolla as seen in the familiar scarlet, ivy-leaved, and other species grown in gardens, of which for present purposes *Pelargonium lateripes* is a suitable example. The geraniums are mostly hardy and the pelargoniums are mostly tender; the first belong more especially to the northern hemisphere, the second to the southern. There is one hardy pelargonium known to a few cultivators, the curious and unattractive *P. endlicherianum*, the flowers of which appear to have only two petals.
p. 129.

DELPHINIUM, from *delphin*, a dolphin, the resemblance to a dolphin's head being found in the flower. N.O., *Ranunculaceæ*. LINNÆAN: 13, *Polyandria*; 3, *Trigynia*.
p. 133.

ANEMONE, from *anemos*, the wind, in allusion to the breezy spots the more hardy species love. N.O., *Ranunculaceæ*, or Crowfoots. LINNÆAN: 13, *Polyandria*; 6, *Polygynia*.—The crowfoot or buttercup order is arranged in five groups or tribes, comprising severally—(1) the clematis and its near kindred, such as the atragene, &c.; (2) the anemone, adonis, thalictrum, &c.; (3) the ranunculus and ficaria; (4) the hellebore, caltha, trolius, aconite, delphinium, &c.; (5) the actæa and podophyllum. The plants of this order are scattered all over the world, most plentifully in temperate and arctic climes, most rarely in the tropics, except in high altitudes where a temperate climate prevails. Comparatively few of them are serviceable to man otherwise than by their beauty. The buttercups are never willingly eaten by cattle, but when made into hay are innocuous and possibly serviceable. A curious exception to the dislike of cattle to plants of the buttercup order is afforded by the water crowfoot (*Ranunculus aquatilis*), which in many parts of the country is drawn from the streams where it grows plentifully as fodder for cows that eat it greedily. All true *Ranunculaceæ* have a watery juice, divided leaves, and the flowers are divided in threes and sixes; the petals distinct, inserted under the ovary. The anemones have a coloured calyx, and often the seed-vessels have a long bearded style. p. 137.

MEZEREON is an Arabic name, and signifies "the destroyer of life," from its caustic properties. Of the generic name *Daphne* it cannot be needful here to speak. N.O., *Thymelacææ*, or Daphnads. LINNÆAN: 8, *Octandria*; 1, *Mono gynia*.—It is necessary to speak a word of caution here. The *Thymelacææ*, it will be observed, are Daphnads and not Labiates. Our sweet old friend the thyme, or thymus, is not in the story at all; that fragrant herb is a labiate, as are very many of our most valued aromatic pot-herbs. The Daphnes are spurge laurels, and poisonous, although in many cases useful for their active properties. In this group of plants we find the beautiful pimelea, the curious banksia, the lovely daphne, and the thymelea. The mezereon is not without renown as an operative agent, for in Siberia the dandies (and the ladies too, perhaps) rub their cheeks with its berries to produce by irritation a red colour, the hue of the rose or the poppy being preferred. The lace-bark tree (*Lagetta lintraria*) belongs to this family, and the eagle-wood (*Aquilaria ovata*) is another important member, furnishing one of the lign-aloes p. 141.

DOUBLE PRIMROSE is of scientific interest as illustrating the physiological changes that accompany the doubling process. The double varieties demand more care than the single, and are more difficult to multiply, as they produce no seed, or so little and in such an uncertain manner that we cannot reasonably expect to secure it except by systematic attention and aided by experience in the matter. p. 145.

MALLOW is from *malacho*, in reference to the emollient or softening properties of the plant. N.O., *Malvaceæ*. LINNÆAN: 16, *Monadelphina*; 8, *Polyandria*.—The mallows are a great and grand family, comprising the mallows of the field, the hollyhocks of the garden, the abutilons of the greenhouse, the hibiscus of the stove, and the cotton plant of the world. These plants have a strong family likeness: the calyx and corolla are usually in five divisions, the stamens indefinite and united in the form of a tube which sheathes the style, the pistil prominent above all, the fruit a many-celled circular capsule containing the seeds. All the mallows are innocuous: most of them are highly charged with mucilage, and not a few are useful as food or as supplying fibres of various qualities. p. 149.

PYRETHRUM, from *purinos*, fiery, sparkling. N.O., *Asteraceæ*, or *Compositæ*. LINNÆAN: 19, *Syngenesia*; 2, *Superflua*.—This “fiery” genus comprises for the most part plants with white flowers, but our *P. roseum*, one of the finest of all known hardy flowers, brings the best of fire into the garden to warm the greensward in the often chilly month of May. This plant is the source of the celebrated insecticide known as Persian powder. It is a near relation of the chrysanthemum and aster, and might properly be called the starwort of the spring. p. 153.

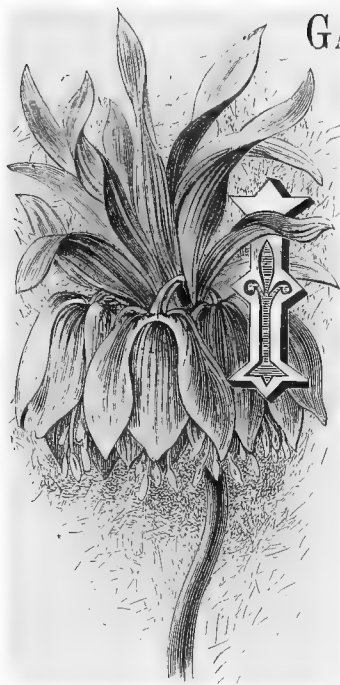
CYCLAMEN, from *kyclicos*, circular, referring to the bulb-like root. N.O., *Primulaceæ*. LINNÆAN: 5, *Pentandria*: 1, *Monogynia*.—The plant appears to the casual eye to be far separated from the primulus, its round fleshy root or corm being a quite distinguishing feature. But it agrees in all essential particulars, and is placed in the second group comprising the primulas, androsaces, soldanellas, lysimachias, and dodecatheons. p. 157.

Lone Flower, hemmed in with snows, and white as they,
 But hardier far, once more I see thee bend
 Thy forehead as if fearful to offend,
 Like an unbidden guest. Though day by day
 Storms, sallying from the mountain-tops, waylay
 The rising sun, and on the plains descend;
 Yet art thou welcome, welcome as a friend
 Whose zeal outruns his promise! Blue-eyed May
 Shall soon behold this border thickly set.
 With bright jonquils, their odours lavishing
 On the soft west wind and his frolic peers;
 Nor will I then thy modest grace forget,
 Chaste Snowdrop, venturous harbinger of Spring,
 And pensive monitor of fleeting years.



CROWN IMPERIAL

FAMILIAR GARDEN FLOWERS.



CROWN IMPERIAL.

Fritillaria Imperialis.

It is not often in the present day we meet with the crown imperial, although it is one of the "old-fashioned" flowers that were in great favour before bedding came into fashion. It is a noble flower, peculiar in character, and adapted for a style of gardening that effects a kind of compromise between the old style and the new. Having an entrance court much overshadowed by large trees, and desiring to keep this court in a state of permanent but

changeable gaiety, we had prepared for the purpose a series of compartments faced with handsome mouldings in Ransome's imperishable stone, and a central jardinet of the same material. In place of earth these compartments were filled with cocoanut-fibre refuse, and in this material pot plants were plunged to make ornamental groups ever varying, and always beautiful. The practice carried on through a series of years developed into what

was called the "plunging system," because the pot plants were plunged in the clean brown fibre instead of being planted in open soil. The most complete success was attained in this direction, and groups of plants were grown for every season of the year, comprising hollies and ivies and other rich evergreens for the winter, and all kinds of flowering plants for other seasons. In due time a trial was made of crown imperials, and we obtained a collection of about a dozen sorts, of which we potted in the autumn about twenty bulbs of each. In an airy, cool plant-house these came into flower about a fortnight in advance of the usual time of flowering out of doors, and they proved singularly useful by reason of the brilliant green of their leafage, and the distinct tones of orange, red, and buff of their somewhat singular flowers. After the first essay we were careful never to miss a season in having a display of these flowers in connection with our plunging system.

The crown imperial is a member of the great family of lilies. The species of *Fritillaria* are about thirty in number, whereof only one is met with wild in England, and that but rarely. This one is the "snake's-head" fritillary (*F. meleagris*), of which a few years since we saw a collection of about sixty varieties in the interesting nurseries of Messrs. Krelage, in Haarlem. The grand old gardeners of the times of Elizabeth and the Stuarts thought much of the crown imperial. Parkinson commences his book of "The Garden of Pleasant Flowers" (Paradisus, p. 27) with this subject, saying—"The Crowne Imperiall for his stately beautifullness, deserveth the first place in this our garden of delight, to be here entreated of before all other Lillies;" and he devotes two pages to the description of it, taking

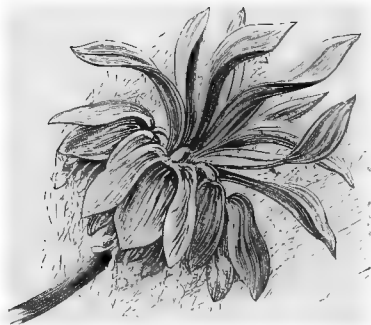
note that "the whole plant and every part thereof, as well rootes, as leaves and flowers, doe smell somewhat strong, as it were the sauour of a foxe, so that if any doe but come neare it, he cannot but smell it, which yet is not unwholesome."

The crown imperial requires a rich deep soil and a sunny exposure. The bulbs being planted in September or October, will produce their flowers in the subsequent March and April, and will die down early enough for the occupation of the ground by summer flowers. To do justice to this noble lily, it should be abundantly fed, hence in preparing the soil for it, manure should be liberally added, and in the spring, when the stems are rising, it will be an advantage to mulch around the stems with fat old manure to feed those surface roots that appear at the base of the stems. If grown as thus advised, every bulb will produce two or three stems, and each of these will produce a large bulb. Thus the crop may be said to prove profitable without resorting to the sowing of seeds. It has been our custom, as soon as the stems were in some degree decayed, to lift the bulbs and store them in a cool place in sand, until the time for planting them again. If it is intended to raise plants from seed, it will be advisable to sow the seed as soon as ripe, at the end of May or early in June, and it will be safer to sow in pans or boxes than in the open ground.

The smaller fritillaries are better adapted for pot culture than the crown imperial, although, as remarked above, we have made a pot plant of the latter to some purpose. A very important species, because of its variations as well as its intrinsic beauty, is *F. meleagris*, the snake's-head lily. In "Maund's Botanic Garden" (vi. 215) we are informed that as many as four distinct varieties may be obtained;

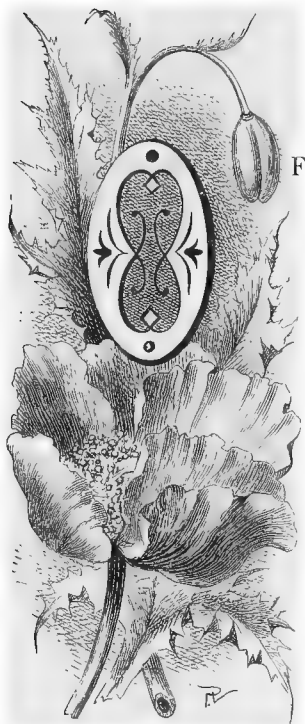
but, as remarked above, we have seen at least sixty in one garden in Haarlem, and these varied so much that their specific identity was a matter of question with a party of experts, until Mr. H. Krelage himself gave the assurance that they were veritable seedlings of *F. meleagris*. Mr. Niven, in his edition of "Maund," figures the *multiplex* variety, which has a perianth of many segments, the colour rosy purple, with light and dark spots.

A collection of fritillaries should include selections of the varieties of *F. meleagris* and *F. imperialis* to begin with, for these are eminently "useful," and worth growing in quantities. Then, to add to these, there are some five-and-twenty species known, but the question is, where shall we find them? The beautiful golden fritillary (*F. pudica*), the miniature fritillary (*F. parviflora*), and the slender fritillary (*F. lanceolata*) are the only sorts we can readily hear of through current catalogues of plants in commerce. As for the rest, they are scattered about in botanic gardens, whence they are obtainable by those who understand the magic method by which rare plants are passed from hand to hand.





ORIENTAL POPPY.



THE ORIENTAL POPPY.

Papaver Orientale.

For this garish plant it may be said "once seen, known for ever." The name suggests an Indian plant, but Armenia and the Caucasus are its head-quarters, and therefore there is no problem presented in the fact that it is perfectly hardy in the English garden. As regards its one distinguishing character it stands alone. There is no plant that can compete with it for the size and fiery splendour of its flowers, which, indeed, spoil everything of a quiet and refined nature that happens to be in the vicinity, when it is holding forth its burning cressets like signals of alarm.

It is very careless of conditions, being a thrifty plant on a cold clay soil, though more thrifty and more splendid on a dry gravel, or on a sunny rockery affording a good depth of free gritty loam.

The perennial poppies are scarcely entitled to be regarded as first-class garden plants. They are in some

degree coarse, and their beauty and bravery soon pass away, and they offer but little of character to interest during the many months when they are not in flower. In this respect they resemble the herbaceous pæonies, although it must be admitted that of the two the latter are the more worthy of regard both for distinctive leafage as well as splendid flowers. But the brevity of their display is of great importance, for they occupy much room, and afford special gratification for so short a space of time that we may liken them to fireworks, that dazzle us for a moment and then make us painfully sensible of the negation of darkness. In a small garden such plants are rather in the way than welcome. But in the woodland, and in the garden that has many large features, they are noble adornments in their season of flowering, and are unobtrusive at other times. And they are particularly valuable in gardens that partake somewhat of a public nature, where there is an ample space of grass turf, mixed shrubberies, and extensive borders that obtain attention only occasionally. Here these large subjects come in usefully, and if there are perennial poppies, pæonies, phloxes, and early flowering chrysanthemums in plenty, there will be much bloom at little cost, because such plants can take good care of themselves for many years if properly planted in the first instance.

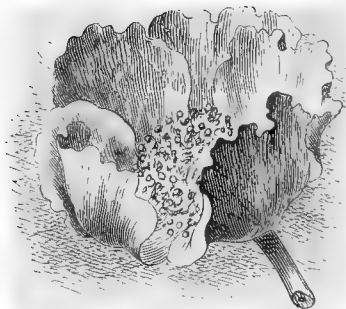
The section of poppies of which our present plant is a representative may afford to the amateur gardener a pretty lesson in plant propagation. The seeds ripen pretty freely, and may be most easily grown into serviceable plants. Moreover, the plants themselves may be divided, and every rooted tuft planted out in moist, mild weather will soon become established, and do its duty. But there is yet a third mode of multiplication, rarely practised, but

applicable to innumerable subjects, from the gigantic paulonia to this flaring poppy. It will be observed that this gay weedy thing has a white fleshy root, remotely resembling that of a parsnip. This may be cut into pieces an inch in length, and the pieces may be planted in pans filled with sandy loam, the tops of the cuttings being just even with the surface; and if kept reasonably moist, and close shut up in a frame, every separate piece of root will in due time make a plant. One of the requirements of the management is *patience*, which, indeed, is the main requirement in propagating plants by any and every method everywhere.

There are several forms of the Oriental poppy, and they are distinguished from other poppies not only by the intense though unrefined colour of their flowers, but by the fact that they have three calyx pieces, other species having but two. *Papaver Orientale* is regarded as the type. It has flowers unaccompanied by bracts. *Papaver bracteatum* is a bracted variety, commonly regarded as a separate species. *Papaver concolor* and *Papaver maculatum*, which have a place in the books, do not properly exist at all. The names originate from the fact that in some cases the flowers are self-coloured deep scarlet, and in others there is a purple spot at the base of each petal. For all ordinary purposes these trivial variations are of no consequence at all.

Tourists in Wales and Cumberland, and other of the mountainous districts of the north-west, are often perplexed by the appearance amongst rocks, and at the foot of old walls on dusty roadsides, of an interesting herb bearing gay yellow flowers. Its likeness to a poppy begets an interest, and its intrinsic beauty sustains that interest,

more especially when it is found fringing the roadway by the side of the former residences of Wordsworth and Coleridge and other of our poets amid the hills. When the neophyte inquires for the name of this plant, he is often told it is the celandine, from which it differs in the most decided manner. This, indeed, is the Welsh poppy (*Meconopsis Cambrica*), one of the most beautiful and engaging of British weeds, and especially worthy of note, from its persistency in creeping close to the walls that have sheltered many of the brightest wits and happiest versifiers whose names glitter in our great Walhalla,





CRASSULA.



THE CRASSULA.

Crassula coccinea.

THIS is one of the handsomest and most useful plants of its class, and, in common with many other garden favourites, it presents us with several variations, the results of the manipulations of the florists. The reader who does not happen to know the plant may be advised to look first in the central avenue of Covent Garden Market in June and July. The accompanying portrait will certainly assist in the identification, but the chances are that the attention will be arrested by a batch of plants having the style of growth indicated by the plate, but with crowning corymbs of flowers of an intensely vivid carmine-scarlet colour. Now it may be proper to say that in nearly all botanical and horticultural inquiries and criticisms, colour is the last quality to be thought of, while form is the first. The splendid scarlet crassulas that will probably be seen in the market, and that one might imagine

to be floral emblems of fire-worship, are examples of the typical, or specific, or normal, or original *Crassula coccinea*, while the one here figured is one of its variations, for the plant gives us a choice of scarlet, crimson, carmine, and white flowers; but in every case the form and the habit of growth are the same.

There is not a plant in the country more worthy of the attention of the amateur florist than this. To grow it well a heated plant-house is absolutely necessary; but given that, the rest is easy. The first requisite to success is to raise a few young plants from cuttings, the best time for this being July. These, being rooted in three-inch pots, may be wintered in the greenhouse, where they must have plenty of light, and be safe from frost and drip. Give them the warmest and driest place in the house, and let them have sufficient water to keep the leaves plump, for if the leaves shrivel, the plants will be weakened.

As soon as they begin to grow in spring, shift them into five-inch pots. Hitherto they have been allowed to grow without check, but as soon as they are nicely established they should be stopped by nipping out the point of each. The plants must be kept rather dry for a day or so after this is done, because of the risk of the fleshy stem decaying. As the object in promoting the production of side-shoots is to secure a foundation upon which to build the specimen, the side-shoots must be tied out regularly, and pulled down a little, but not quite horizontally. They should also be allowed to grow unchecked until they are quite six inches in length, because a cluster of laterals round the main stem is not so much to be desired as a framework of stout side-shoots. As a rule, they require to be stopped twice the first season, and it is good practice

to shift them after the second stopping immediately the young shoots are about an inch in length.

They should have during the second winter quarters similar to those occupied during the first, for a light position and comparative dryness at the roots are the main essentials in keeping them in good health during the winter. Early in the spring following, shift into eight-inch pots, and if it is not intended to flower them in the course of the summer, all the principal shoots should have the points nipped out shortly afterwards. The young stock ought not to be allowed to bloom until they assume their proper form, and this will not be the case until the third season from the cutting pot. If the growth made during the summer is satisfactory, they will require a second shift early in August, ten-inch pots being the most suitable for them at this stage; and after the re-potting the shoots must be tied out a sufficient distance apart, to admit of each receiving its fair share of light and air, and to ensure its being thoroughly matured.

They will require no further attention beyond the regulation of the growth, and supplying them with water, until after they have flowered, and then they will need pruning. As soon as the flowers fade, proceed to prune all the shoots moderately back—say, to within two inches of the base of each. When they have begun to grow again, turn them out of the pots, prune the long roots, and put them in pots of the same size again. Place in a cold frame, and keep the soil just moist until the roots have taken possession of it. The water supply can be increased moderately. After they have started fairly into growth, ventilate the frame freely, and when the young shoots are an inch or so in length, thin them out if there is any danger of over-

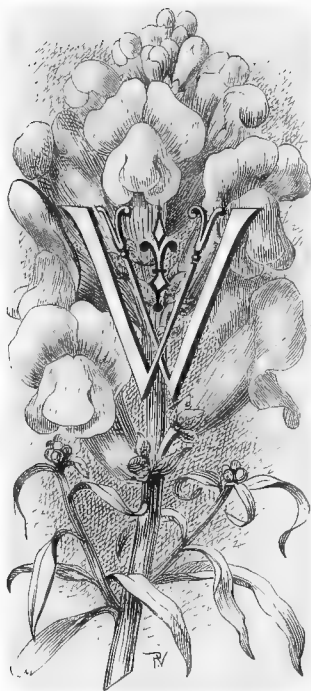
crowding ; but, as the plants should attain a larger size each year, the young growth must not be thinned excessively, but as they progress be tied out neatly, to afford each a fair amount of space for its development. The same system of management must be adopted in subsequent years, so that it is not necessary to allude to it further. The compost should consist of three parts of good turfy loam, and a part each of leaf-mould, powdery manure, and grit. In training specimens, the cultivator should aim at producing a solid head of bloom, convex in outline, and not unlike that of a specimen show pelargonium.

Those who do not care to take so much trouble may allow their plants to flower naturally in the first summer, in which case it will be advisable to strike a few cuttings from them and then throw them away, for unless they are well managed they become long-legged unsightly things. But for the grand culture they are grand indeed.





SNAPDRAGON.



THE SNAP-DRAGON.

Antirrhinum majus.

HY should this gay flower be called a snap-dragon? To snap, in vulgar parlance, is to bite suddenly, or to utter biting words in a snappish or sudden and ungentle manner, as in a characteristic passage in Cowper's "Task"—

"Is Winter hideous in a garb like this?
Needs he the tragic fur, the smoke of
lamps,
The pent-up breath of an unsav'ry
throng,
To thaw him into feeling; or the smart
And snappish dialogue that flippant wits
Call comedy, to prompt him with a
smile?"

Although the dragon the flower is supposed to represent in the act of snapping is a creature of the imagination, it is more or less reptilian, and the gaping mouth and huge under jaws of a lizard or crocodile are very fairly suggested in the conformation of the flower. The botanical name *Antirrhinum* refers to the snout-like figure of the flower, and so we are doubly compelled to take notice of its place in the long catalogue of "mimetic" plants, which are not

mimetic, because in their resemblances and reminders of animal form they are altogether passive and incapable of intention.

Antirrhinum majus is probably not a native plant, but it is so thoroughly naturalised that it may well rank as such, and it is certainly one of the most splendid and interesting of our wildings. Nowhere does it appear to such advantage as on the old bastion flaunting its gay banner amid grey ruins, or on the old garden wall, where perhaps the common polypody and the wallflower fight with it for the choicer crevices. It has afforded us immense amusement to note the wanderings and variations of the plant in our own garden. It first appeared on an artificial ruin that was constructed chiefly for the accommodation of sedums, sempervivums, hardy ferns, and the like. On a very commanding pinnacle, one bright summer day, a splendid plant of crimson snap-dragon was discovered, flowering gaily, and seeming to sing "I am king of the castle." The next year there were many such, all in commanding positions, for they appeared to have a gift of geography in finding peaks and passes and table-lands in various parts of the garden. But as they thus spread without aid, and generally sprouting without hindrance, they broke into a variety of colours, and during a run of about twenty years they abounded yearly, and the best of them always were those of a full rich crimson colour and those of a delicate primrose-white or straw-yellow. One day in the latter part of the summer of 1878, we were pointing out to a friend how a number of young plum and apple trees had appeared on the rough brick dome of the stoke-hole connected with the plant-houses, and on looking about we discovered a plantation of dozens of snap-dragons of all

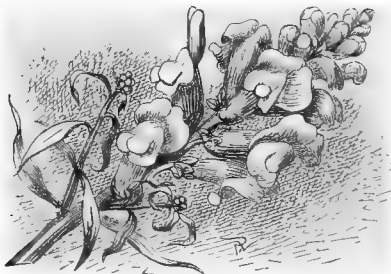
colours, all growing, as the little fruit-trees were, on the rough brickwork, without a particle of proper "mould." Here we again noted that the red, pink, white, and brown flowers were comparatively poor, but the crimson and the pale yellow were glorious, both for their fine form and purity of colour.

Although from these observations it appears that the plant tends in two distinct directions in its natural variations, it is due to the florists to say that they have produced a series of named varieties, remarkable for the number and size and smoothness of their flowers, as well as for distinctness and purity of colour. We have seen in nurseries collections of over a hundred varieties, embracing all colours except true blue and clear scarlet, and ranging in height from pigmies of four or five inches, to robust plants a foot to a foot and a half high. They are especially adapted to adorn the flower-beds in places where the natural soil is hot and dry, and they make useful bedding plants, because, being perfectly hardy, they need no aid of glass to keep them through the winter. As regards soil, however, they do well on any soil that is not absolutely boggy, but a sandy or calcareous staple suits them best when the question arises as to their proper location.

Named varieties are raised from cuttings, and when plants are required for the production of distinct masses of colour, this mode of propagation should be practised. But when there is no special need for uniformity, a pinch of mixed seed may be sown in spring, and the plants may be put out when large enough, and there will be plenty of showy flowers in due time. If it is required to establish them on a wall or ruin, the seed may be thinly sprinkled and covered with a little mould. The best time to do this

is when the seed is newly ripe in autumn, to afford the plants a long season of growth before the sunshine persuades them to flower.

Mr. Darwin, in his interesting work on "Cross and Self-fertilisation in the Vegetable Kingdom," gives some interesting particulars of the ingenious way in which bumble-bees obtain the honey from the snap-dragon when they cannot push past the projecting lip: "In *Antirrhinum majus* one or two holes had been made on the lower side, close to the little protuberance which represents the nectary, and therefore directly in front of and close to the spot where the nectar is secreted." In experiments recorded at page 363 of the work above quoted, Mr. Darwin found that while fifty seed-pods protected by a net gave nearly ten grains of seed, a similar number of pods from plants that the bumble-bees had free access to yielded over twenty-three grains of seed. It is not, however, by piercing holes in the flower that the bees effect fertilisation, but by thrusting their way through the jaws of the dragon into the throat, where they encounter the stamens, and becoming dusted with pollen, leave some of it on the stigma of that or the next flower they enter in like manner.





FOXGLOVE.



FOXGLOVE.

Digitalis purpurea.

It is proper that the fox should be provided with a glove, for, as a midnight marauder, a muffled hand may be of the first importance in the prosecution of his business. Opinions differ as to the precise meaning of the familiar name of this, the noblest of our British wildings; the botanical name *Digitalis* is of German origin—that is to say, a German botanist fitted the plant with a Latin name, because up to his time, 1542, it had not been recognised in either Greek or Latin. Dr. Prior is decisive about “foxglove;”

but for all that, those learned in the definition of names have had much to say about it. *Digitalis* is from

digitabulum, meaning "thimble;" and the flower may be likened to the simple household appliance for the comfort of a wounded digit known as a "thumb-stall," or soft thimble. But what does the fox want with such a thing? The assumption with which we open this paper, that as a footpad he would like to follow his trade quietly, seems not to help us much, even in the region of fancy; for, to put the case in another way, the fox does not want a glove or a thumb-stall, he wants four seven-league silent boots! In Norway the plant is not the fox's glove, but the fox's bell, to provide him with music in the gloaming. In the Anglo-Saxon there is no such name as foxglove, but *fores-gliew*, for it happens that the flowers, as they hang from the slightly arching stem, resemble the ancient musical instrument, consisting of bells attached to a rod, that was called *gliew*, and used for the production of bell-music. It may occur to the inquiring reader, whether the men who likened the flower of this plant to a tintinnabulum might not have done better, in the gratification of their fancy, to select a *Camp-anula*, or "bell-flower." Another view of the subject makes this the folk's glove, or fairies' glove; but we may suppose it large enough for a fairies' house—that is, for some sorts of fairies. We now make a conjecture which is at all events original. This is a spotted flower; a spotted picture or book is called "foxy," and by parallel, a spotted thimble may be a foxy glove. If the adjective "foxy" is of respectable antiquity, the proposal acquires respectability; but we suspect it is of modern origin and of poor lineage.

The distribution of the plant and its geographical characters are matters of some interest. It is, in one sense,

universal; but in the Eastern counties it is scarce and poor, in the Western counties abundant and splendid, while in the Midlands it very much avoids valleys and open plains, but attains to a distinct power in the summer season wherever the rainfall is considerable. Thus, in the dales of the Peak district, and throughout the Lake country, and all through the western coasts, on hard rock, on poor gravel, and on railway banks, the foxglove is conspicuous for frequency and splendour. Perhaps nowhere in England is there a finer display of its flowers than on the road from Buxton to Leek, and in but few places does it attain to such richness of colour as on that road, and also on the water-shed over which passes the railway line between Dolgelly and Llangollen, in mid-Wales.

When grown as a garden flower the foxglove should never be planted in a dry, breezy, starving situation. To be elevated is quite to its liking, if it is sheltered by leafy surroundings; but often an elevated site is too arid for this moisture-loving beauty, and the fernery, or any snug nook of a leafy kind and a little wild in character, would promote a fine growth, and at the same time set off the peculiar beauties of the plant. We have never seen foxgloves more happily placed for decorative effect than on the rockery in the Royal Gardens, Kew, where, in truth, they constitute what is called a sensation, for at the entrance to the defile they rise high above our heads, and we see their fine spires of purple, rose, crimson, and pure white flowers, partly against the blue sky and partly against congenial greenery.

In common with lilies, foxgloves associate well with rhododendrons; and although in a mixed border the third or fourth row is the proper place for them, they appear to

be well placed no matter where they are, and therefore, when self-sown plants occur where they seem intrusive, it is well to leave them undisturbed if possible, for the chances are all in favour of a surprising success in the end. In any and every case a good clump is better than a few single plants, and it matters not how the sorts are mixed ; in fact, the more mixing the better.

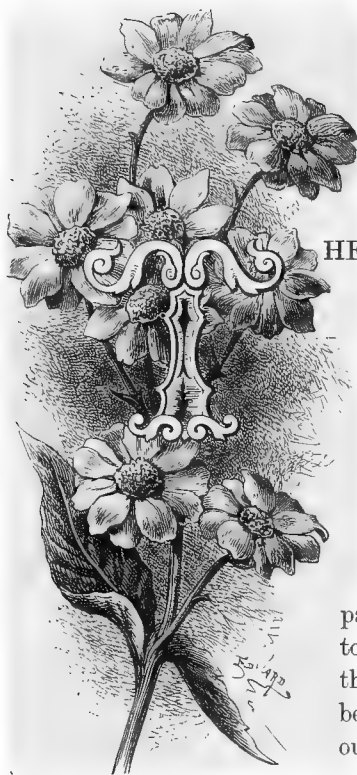
To raise a stock of plants, the seed should be sown in April or May in pans or boxes, and the young plants should have a little nursing in a frame, and be put out when large enough where they are to remain for flowering. A sowing of seed should be made every year, for although many of the plants will flower a second, and even a third time, a considerable proportion will die off after once flowering. To promote the perennial character, the seed-pods should be assiduously removed as the flowers wither, and from the finest only should seed be taken for keeping up the stock.

A yellow foxglove is sometimes inquired after. There is no such thing. But there are yellow species of *Digitalis*, such as *D. grandiflora* and *D. lutea*, although they are not of any special value as garden plants.





CINERARIA.



THE CINERARIA.

Cineraria cruenta

THE origin of the cinerarias, that are so highly esteemed by the florists, cannot be determined with certainty, but their prevailing characteristics point to *C. cruenta* as undoubtedly one of the parents, and *C. populifolia* is probably another. It matters little to the amateur florist, perhaps, what was the particular wilding that gave rise to a race so well established as the one represented in the figure before us, but the parentage of our pets should be traced in every instance if possible, for

when we would make "a new departure" in cross-breeding, it is of primary importance to know something of the lineage of the plants whose characters we propose to change.

The cineraria is a tender plant, and a troublesome plant, and a plant that often disappoints the experts; therefore it is bound sometimes to disappoint the beginner

in floriculture. It is not particularly tender, and really will not endure a high temperature for any length of time. On the other hand, frost, damp, a cold wind, a dry air, or long-continued sunshine may prove fatal to it, or at least injurious. Its wants are few, but it can endure no extremes; and, when the circumstances are unfavourable, it becomes infested with green-fly, or red-spider, or thrips, or mildew, or some other plague, or it simply dies, and tells no tale of the reason why. Where cinerarias are seen in good condition, therefore, we must regard them as representing careful, if not skilful cultivation, for a blunderer will never do any good with them, nor will one that is inconstant or impatient, or too trustful in rough-and-ready methods.

The best cinerarias are grown in cold frames, or in pits heated only to a sufficient point to keep out frost. They should never be placed on wooden stages, or in large houses, except when in flower and required for display; all the growing should be done in pits or frames on a groundwork of clean coal-ashes or gravel, and at all times the plants should have abundance of air and light, but be protected from frost and from excessively powerful sunshine. The soil should be rich and light, consisting of turfy loam, leaf-mould, very rotten hotbed manure, and sharp sand, the turfy loam always predominating. The compost should be prepared long before it is needed, and should be several times turned and mixed, to free it from vermin, and render it perfectly sweet and mellow. It should be broken down to a fine texture, but should not be sifted—in fact, as a rule, sifted soil is worthless.

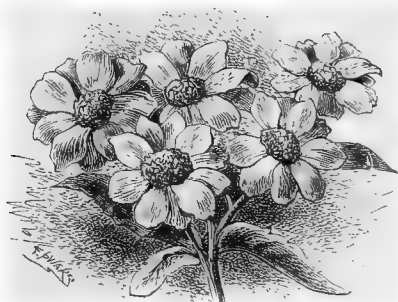
The cineraria is increased by seeds and offsets. For all ordinary purposes seeds are to be preferred, and it is

therefore advisable to destroy all the plants that have served their purpose as decorative objects. The seed should be sown as soon as ripe, or as soon after as possible. It will, however, keep to the following spring, but after a year has passed from the time of gathering it is worthless. It should be sown in shallow pans filled with light, sandy soil, and should be very slightly covered. In places where great numbers of cinerarias are grown to produce seed for sale, no trouble is taken to sow seeds for ordinary stock. The handsome plants are kept in pits on a flooring of clean coal-ashes, and in the course of gathering the seed, a certain quantity falls, or is blown about and lost for a season. But the loss is soon compensated for by the appearance of innumerable seedling plants on the ground amongst the pots, and these are lifted when large enough, and then receive the needful care to render them worthy to maintain the stock.

When offsets are wanted, the flower-stems must be cut down, and the plants must be put out-of-doors and taken care of; and when the offsets appear they must be carefully removed, and should have the same kind of nursing as seedling plants. We have obtained offsets in great plenty by planting the selected specimens in beds of light, rich soil, in an airy pit. They are turned out without damage, and the fresh soil promotes production of offsets.

The magnificent specimen plants that are seen at the spring flower shows are invariably grown from offsets. There are, at least, two reasons for this course of procedure. In the first place the grower knows what sort of flowers he will have, and may select according to taste and knowledge; whereas when we grow seedling plants we do not know what the flowers will be until they actually appear.

Another reason is that offsets make better plants than seedlings. They are more compact in growth, and produce more even heads of bloom. And there is yet a third reason for preferring offsets for specimen culture: it is that three of them may be placed in one pot to present the appearance of one plant, a thing impossible—or at all events ludicrous—in the case of seedlings, because when the head of bloom is produced, it should be of one kind in every separate specimen. The usual practice is to pot the offsets singly into small pots, and when they have become well rooted, they are transferred in threes to five-inch pots, and in due time shifted from these to the larger pots in which they are to flower. Great care must be taken to keep all the sorts correctly labelled, when this system of potting them in threes is practised; for if more than one sort is used to make up a group of three, the specimen will be useless for exhibition. It must be repeated, however, that for all ordinary purposes it is best to grow cinerarias from seed, and care must be taken to secure seed of the best quality.

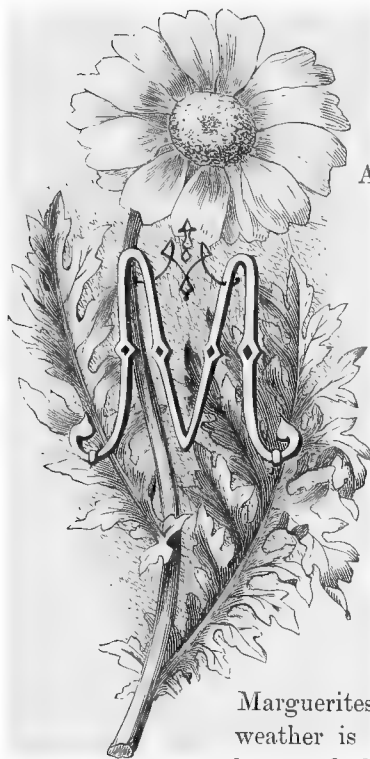




GARLAND DAISY.

THE GARLAND DAISY.

Chrysanthemum coronarium.



MARGUERITES may be princesses or peasants, but if human they must be good to be called Marguerites. They may also be pearls or flowers, and in either case they must be pure and pretty; and hence white daisies and chrysanthemums and pyrethrums are by the fanciful French termed, collectively and generally, "Marguerites." Everywhere in Paris, from the 1st of January to the 31st of December, we may meet with

Marguerites of exquisite beauty. If the weather is cold, they are in the glass-houses of the growers or the warm shops of the dealers in flowers. If the weather is warm, they are flowering out of doors; and most beautiful are the hedges and bands and beds made of Marguerites and petunias and marigolds that are in the gardens and promenades of Paris. Here they are comparatively

unknown, and so it may be information to our readers to say that one of the best of the plants of this class, and the one most commonly employed in Paris, is *Chrysanthemum frutescens*, which may be grown in the form of a small tree, with elegantly notched leaves and charming white flowers.

The garland daisy—as, for the sake of a homely name, we designate the flower before us—belongs to the Marguerite series, but it is one of the least important, being but an annual, although a beautiful and useful flower. It grows about two and a half feet high, has leaves elegantly cut, and flowers that vary from pure white to deep yellow, both single and double. It is a native of the Levant, but is ranked with hardy annuals, as it requires no special care in its cultivation, and it flowers freely when grown in common soil.

A finer plant than this is the sub-tropical *C. carinatum*, which has leaves of a somewhat fleshy texture, finely cut and somewhat curled, and flowers various in colour. This, though a somewhat tender plant, may be grown in the usual way of a hardy annual, and will flower finely in common soil, if enjoying full sunshine and the plants not overcrowded in the clump. In the seed catalogues this will be found entered as *Chrysanthemum tricolor*, and there are at least half a dozen different varieties, all worth growing—in fact, the grower of annuals would do well to secure all the sorts that are offered, and grow them with care, more especially as to giving them room enough, for from July to September they will afford abundant entertainment in the variety and beauty of their flowers.

The chrysanthemums, pyrethrums, and daisies are so nearly related that many members of these families are

known by these names interchangeably. The beautiful race of florists' pyrethrums, that deserve a place of honour in every garden, are often ranged under the larger genus as *C. roseum*, and the pretty pompom chrysanthemums are by the same licence known as "Chusan Daisies." With the garland daisy before us, therefore, and not being in the humour to display our learning, we shall help on the page by quoting a portion of Eliza Cook's pretty poem, "Buttercups and Daisies"—

" I never see a young hand hold
The starry bunch of white and gold,
But something warm and fresh will start
About the region of my heart.
My smile expires into a sigh ;
I feel a struggling in my eye,
'Twi' humid drop and sparkling ray,
Till rolling tears have won their way ;
For soul and brain will travel back,
Through memory's chequered mazes,
To days when I but trod life's track
For buttercups and daisies.

" There seems a bright and fairy spell
About their very names to dwell ;
And though old time has marked my brow
With care and thought, I love them now.
Smile, if you will, but some heart-strings
Are closest linked to simplest things ;
And these wild flowers will hold mine fast,
Till love, and life, and all be past ;
And then the only wish I have
Is, that the one who raises
The turf-sod o'er me plant my grave
With buttercups and daisies."

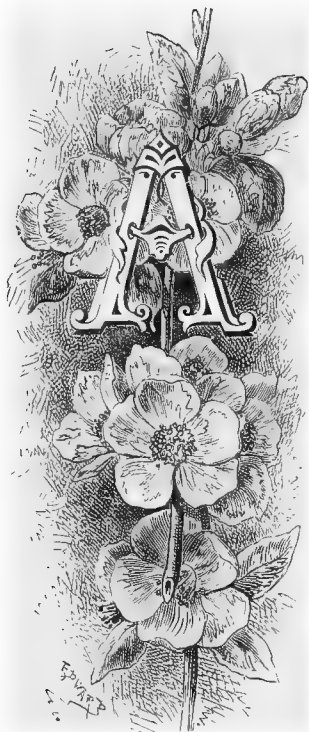
We have some handsome wildings allied to the garland daisy, as, for example, the great ox-eye daisy

(*C. leucanthemum*), which in the height of summer makes many miles of railway banks as white as if just snowed upon; the corn marigold (*C. segetum*), a thoroughly handsome flower, wholly yellow; and the corn feverfew (*C. inodorum*), the flowers of which are white with a yellow centre, with leaves finely cut.





JAPAN QUINCE.



THE JAPAN QUINCE.

Pyrus Japonica.

APPLES and pears and quinces are fully as interesting as things of beauty as they are as things to eat. But as ornamental trees it may be said their time has not yet come. Only the advanced horticulturist is aware of the exceeding beauty of *Malus floribunda* and *Pyrus spectabilis*, and we may venture to say there are dozens of trees of the same natural order equally hardy, equally beautiful, and equally unknown, though destined, we hope, to find a home ere long in many an English garden. The commonest of our orchard fruits are so beautiful when in flower, and also up to the

time when the fruit is ripe, that we may very well excuse those who declare themselves content with the beauty of trees that are of undoubted usefulness, and which by their usefulness afford much gratification to the eyes of their possessors. Of the many ornamental species of pyrus that are known, the one before us is

certainly the most familiar, and it may be properly spoken of as a splendid garden tree. The name by which we bring it forward is perhaps "out of date." In modern books it is usually described as *Cydonia Japonica*, and occasionally as *Chænomêles Japonica*. In days when county courts were administered by "commissioners," we heard a defendant repudiate a debt on the ground that his name was entered in the plaint incorrectly. "Oh!" said the presiding commissioner, "that is of no consequence; you will do; you owe the money, and you will have to pay it." And in the same way *Pyrus Japonica* will answer our purpose, for we are more concerned about its status in the garden than its name in the books.

Very soon after the "turn of the year" this handsome shrub produces its brilliant flowers. For that reason, although it is thoroughly hardy, it should be planted in a sheltered spot, and a dwarf wall suits it admirably. But it may be trained to a trellis, or to a few rough rods like an espalier; or, if it have the aid of a stake or two, it may be left without any training, and thus be allowed to form a free, informal, flowery bush.

The flowers appear before the leaves, and when the tree is in leaf there are sometimes to be found a few of the "quinces!" It is certainly not a fruitful tree, in the usual acceptance of the term; but old trees on warm walls will, in a dry hot summer, produce a few fruits, and these probably would make a good marmalade, or some other preserve. We say "probably," because we have never seen the fruit turned to any account, our own occasional crops having been given to friends as curiosities, when, perhaps, it would have been better to make the experiment of ascertaining their value as catables. They are nearly

round, and about the size of a Tangerine orange; they ripen off a dull green colour, and are then very fragrant and as hard as flints. When cut up they are found to be packed with large dark pips, around which is a broad rim of flesh of a most uninviting character, the flavour being rough and styptic.

Within the past few years a number of fine varieties of this pyrus have been brought into cultivation, but whether imported originally from Japan, or raised in Continental nurseries, we are not prepared to assert. But we *can* say that they are beautiful, and much to be desired as garden trees. They comprise scarlet, flesh-coloured, pink, mottled, and pure white flowers, one being semi-double, and all having the free-blooming habit of the crimson variety that may be regarded as the type. The best place, generally speaking, for these would be a warm dwarf wall; but they might be trained as cordons to make boundary lines, in a case where such things were needed, and of course as flowering shrubs for a trellis they would be equally interesting and beautiful.

This pyrus is like the rest of its family in requiring a good soil, a deep moist loam suiting it exactly. But it is not fastidious, and will generally thrive where any other crab or quince can hold its own.

Having named *Pyrus spectabilis* and *Malus floribunda* as beautiful hardy trees, it may be well to add the names of other species that have similar claims to attention for their ornamental qualities. *Pyrus prunifolia* is the Siberian crab, a charming tree for the knoll or woodland, the fruits of which make a delicious preserve; *Pyrus coronaria* is the American crab; *Pyrus baccata* is the cherry crab. *Pyrus aria*, the white beam tree, is a splendid

object when its fruits are ripe. *Pyrus aucuparia* is the well-known "mountain ash," the exceeding beauty of which is never revealed near a town as it is in the country, and more especially on the margins of woods in mountainous districts.

Quince marmalade is one of the most delicious sweetmeats that may be inquired for in a country house. To prepare it is an easy matter, provided you have the quinces. They are to be pared, quartered, and the cores removed; then the fruit and the pips are to be put into a stewpan with a liberal allowance of loaf-sugar and a very little water, and kept boiling over a clear fire until the fruit is quite tender. It is then to be mashed with a spoon, and put into jars and tied down for use in the same way as any other preserve. About three-quarters of a pound of sugar to every pound of the fruit is usually enough, but equal weights of each are sometimes taken.

The common quince will thrive almost anywhere, but is well adapted to plant in a damp spot. It should never be pruned, but be left to grow in its own way.

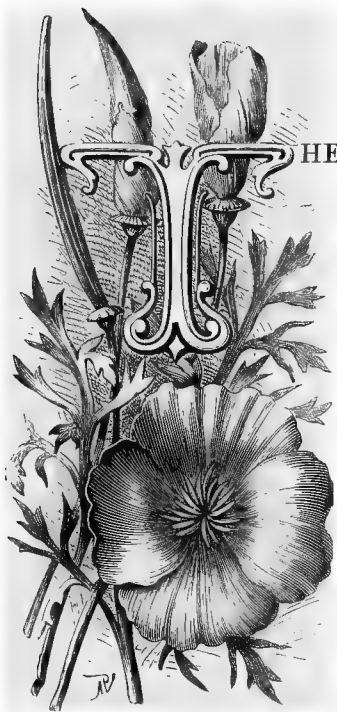




ESCHSCHOLTZIA.

THE ESCHSCHOLTZIA.

Eschscholtzia Californica.



THE profane manner in which his name would be uttered and execrated for its inherent ugliness, and the perversity of writers and printers in spelling it, could never by any chance have occurred to Dr. Eschscholtz, happy in the midst of his flowers. Peace to his dust, honour to his memory, and may his name, as having a place in the roll of devotees of the goddess Flora, be henceforth and for ever spelt correctly.

This is a curious and interesting plant, and so nearly related to the genus papaver, that it may with propriety be called the yellow Californian poppy. The leaves are of a glaucous green, and much divided into narrow linear segments. The flower-bud is an elongated spiral cone, covered with an extinguisher-like calyx, which is pushed off upwards as the petals expand, and the flower rests on a fleshy

receptacle with a dilated margin, which has been, or might be, copied in many works of art. The seed-vessel is a long striated pod, altogether differing in appearance from the globular or urn-shaped pod of a true poppy, and it opens by two valves. For a study of plant structure this is a capital subject, and the young botanist will do well to grow a few tufts of *Eschscholtzias* in the garden, and give close heed to them in all their stages from the cradle to the grave.

The *Eschscholtzias* are classed as annuals, and may be grown as such, because they flower the first season if sown in February or March, or still better in the autumn, as advised in the paper on the Virginian stock. But they are true perennials, with persistent fleshy roots, and have but to be left alone to last many years. When they have become established in a garden it is not an easy matter to get rid of them, for they sow their seeds and spread as wildings, and as summer advances we see their gay flowers in all sorts of odd places where the plants have found suitable nooks for themselves, and have escaped the scratch of the weed-extermimating hoe of the gardener. In such cases what is to be done? Well, there is an easy way out of every difficulty, and the only difficulty is to know the way. In this case it consists in leaving the plants alone, for weeds they may be, and none the worse for that—why cut short their bright career when they do not even so much as cry, “Please, please give me a drop of water?”

The species and varieties of *Eschscholtzias* in cultivation are all worth growing, and do not amount to many. *E. Californica* produces flowers of a bright yellow colour, the petals blotched at the base with orange. *E. crocea*

differs from it only in having flowers of a saffron colour, and a receptacle rather more dilated. *E. compacta* has smallish flowers of yellow and orange, the margin of the receptacle almost flat. *E. tenuifolia* is very distinct, the leaves crowded, flowers numerous, colour yellow, the receptacle tubular, the margin very slightly dilated; a very gay and interesting plant.

The plants now under notice were amongst the splendid botanical acquisitions of David Douglas, one of the most capable and renowned collectors employed by the Horticultural Society. His principal explorations of the country watered by the Columbia river, and of California, were accomplished in the years 1825-6-7, and the results are to be seen in every garden and every catalogue of plants. He obtained many of the annuals that are now the most popular, also the curious tribe of lilies named *Calochortus*, some fine species of *Ribes*, and many more good things, not the least amongst them either in magnitude or importance being the magnificent Columbian fir (*Abies Douglasi*), which in its native country attains a height of 300 feet, and if we may judge by the noble specimen in the grounds at Dropmore, is likely to attain a similar stature in this country if enabled to hold its own against the storms of heaven and the destructive propensities of man.

The life of David Douglas was largely chequered with misfortunes. In a journal he sent, with collections of seeds, insects, birds, &c., from Western America, he relates that he had pursued his explorations when his knee was disabled by an accident, and his sight was so dim that he could hardly use his gun. And he humorously tells of an old chief at Oak Point named Tha-a-muxci, who had a profound yearning for the luxury of being shaved, and was

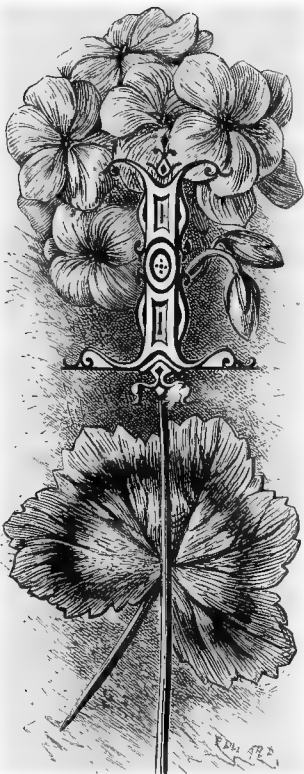
gratified by Mr. Douglas using his razor upon his face, in return for which kindness he accompanied the botanist "all along the coast and sixty miles up the Cheecheetin river." When he met with the giant fir that has been named in remembrance of him, he makes note in his journal that "new or strange things seldom fail to make great impressions, and we are often at first liable to overrate them;" and further on he remarks, "lest I should never see my friends to tell them verbally of these most beautiful and extremely large trees."

The career of Douglas was as brief as it was brilliant. At the age of 36, being then engaged in botanical explorations in the Sandwich Islands, he fell into a pit that had been designed as a trap for buffaloes, and wherein one had been already caught. The infuriated beast killed the intruder, but not without a struggle, for the unhappy man fought hard for his life. This occurred July 12, 1834.





SCARLET GERANIUM.



SCARLET GERANIUM.

Pelargonium zonale.

It is to be hoped no savage botanist will behold this page, for it is a great sin against botanical propriety to label the flower before us “geranium,” for a true geranium is something very different. All the showy plants of this class that are so highly prized in gardens are pelargoniums, or stork’s-bills, the seed-vessels just before they begin to separate bearing some resemblance to the bill of a stork. The pelargoniums are, for the most part, natives of the Cape of Good Hope. They are shrubby in habit, but never attain to the dignity of trees, and they are distinguished by the irregularity of their flowers, the petals of which are never, or

but rarely, of equal size throughout. The geraniums are mostly herbs of Europe, and a certain few of their number are conspicuous amongst the wild flowers of Britain, the merry little herb Robert of the mountains (*Geranium*

Robertianum) and the sedate but lovely blue geranium of the valleys (*Geranium pratense*) being notable examples familiar to every wayside botanist. The generic name implies that the cluster of seeds when about to separate represents a crane's bill, and a common name of the herb Robert is "Robert-leaved crane's-bill." There is another group classed under the generic term *Erodium*, the heron's bill, and the best-known plant of this genus is the hemlock-leaved heron's-bill (*Erodium cicutarium*), a sweet little thing bearing a near resemblance to the herb Robert.

It must be understood, therefore, that our ordinary talk about geraniums refers to pelargoniums, and it will be waste of time to fight a battle in defence of the misuse of the term geranium, because the botanists have settled the matter, and there is no court of appeal against them.

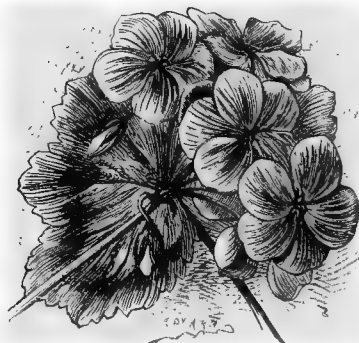
The pelargoniums of our gardens are seen by the most casual observer to be divisible into two great classes. One class may be considered to have for a centre the (perhaps) apocryphal *Pelargonium speciosum*. This group has green leaves that are much wrinkled and deeply notched, and large flowers that are sometimes spotted on all the five petals, but usually the two top petals alone are spotted, and these often are heavily and richly blotched with black, maroon, or crimson. The other class comprehends the plants familiarly called "zonals," the central species being *Pelargonium zonale*, a somewhat ugly thing, with coarse leaves that are distinctly zoned, and flowers that are distinguished by the narrowness of the petals, so that they are properly, though perhaps disrespectfully, spoken of as "windmills."

This possible parent of the zonale group was introduced from the Cape in the year 1710, but many years elapsed

ere the florists took it in hand for the purpose of improving it for horticultural purposes. The results, however, of their more recent labours are really amongst the wonders of invention, and illustrate in the most striking manner the doctrines of evolution that are now generally accepted by men of science. A pelargonium is distinguished by one conspicuous sign, as well as by many that are inconspicuous. The petals are never of the same size, and usually the two topmost are much larger than the other three. But the florists have aimed at the obliteration of this distinguishing character, perfect symmetry being one of their main requirements in a flower of this kind ; and they have succeeded in enlarging the lower petals so that they equal those above them in size, and they have also caused the flower to fill out, so that in place of the windmill we have a close disc, the petals being so broad as to overlap, and so smooth and equal that the flower rather appears to be formed of one piece than of five separate pieces, that were formerly separate and visibly independent. We will not discuss the propriety of the proceeding, but declare ourselves as altogether in favour of the florists' work, and being in no way ashamed to confess that we have played our part in the performance, and secured very many splendid varieties of zonals, with smooth, circular flowers, formed of stout, overlapping petals, so symmetrical and compact as to suggest to the casual eye a perfect disc of one piece only.

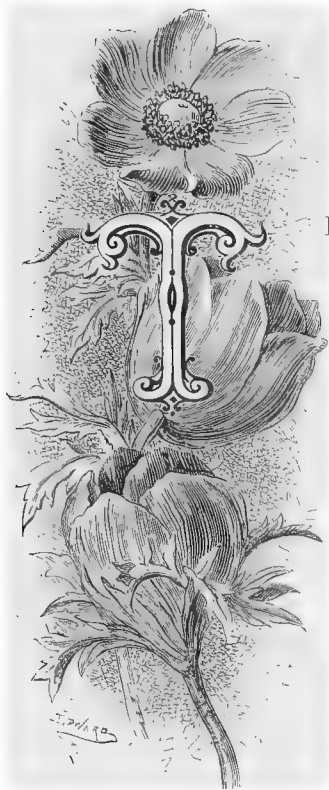
The cultivation of the zonals is pretty well understood, and the plants are so accommodating that they submit to the most diverse conditions, save that five degrees of frost is the utmost in the way of cold that they can endure. But they love sunshine, though they never need a rich soil, and any excess of moisture at any time of the year causes

the leaves to become spotted, the growth rank, and the flowers few, while continued damp in winter is fully as fatal as frost to them. The high delight of the amateur who has taken in hand this class of plants for special treatment is to be found in the raising of seedlings. Oh, it is a rare pleasure to see a house full of seedlings just beginning to declare themselves in their first flowers as candidates for fame—or for the rubbish-heap! And to raise seedlings is an easy matter. The simplest mode of procedure is to take seed from the very best sorts that can be obtained, and sow it in a gentle heat in the month of March. The plants may be pricked off into thumb-pots, and afterwards, when large enough, be potted into 60 size, and again potted on into 48 size. The proper soil for them is a sweet, sandy loam, and all the better if from old meadow turf that has been laid up a year to break down the fibre; but any fairly good soil will answer with a liberal admixture of sand. If the management is good, some of them will show their flowers within a hundred days from the date of sowing the seed.





POPPY-ANEMONE.



THE POPPY ANEMONE.

Anemone coronaria.

THE familiar name of this fine border flower is admirably descriptive, especially for the large crimson and scarlet varieties with black centres that very closely resemble poppies, but show themselves six weeks or more in advance of any true poppy either in field or garden. And the flower is not far removed from the poppy in its essential characters, although in the books the dillenias, the magnolias, the berberries, and the water-lilies come between them. In his "Vegetable Kingdom," Dr. Lindley, speaking of the order of poppies, says:—"The

greatest affinities are with the crowfoots, from which it is sometimes extremely difficult to know this order without ascertaining that the juice is milky and narcotic." All the crowfoots, comprising the ranunculus, anemone, clematis, hellebore, and aconite, have watery and acrid juices, while the poppies are characterised by milky and narcotic juices.

Garden anemones may be readily separated into two classes. In one class we have the poppy anemones (*A. coronaria*), natives of the mysterious country called the Levant, as also of many regions that fringe the Mediterranean on its very irregular northern boundaries. In the other class we have the star anemones (*A. hortensis*), in which occurs that splendour of the spring garden, *Anemone fulgens*, a very fiery star, and one that never fails to surprise us when we see its first flowers in the forward spring. These are garden anemones *par excellence*, and one cannot have too many of them if life is to be made endurable in these hyperborean regions. As for other anemones, their name is not legion; but there are many that may properly demand a place in the rockery, and, while the opportunity occurs, it may be proper to offer the reader a list of the "indispensables." *Anemone Alpina* comes near to *A. coronaria*; the flowers are white and sulphur-yellow, growth vigorous. *Anemone angulosa* is our sweet old friend the blue hepatica; plant it anywhere on rockery or border, and take care not to disturb it for at least ten years. *Anemone apennina*, a lovely starry blue flower that appears at the same time as the early daffodils. *Anemone hepatica*, the common hepatica, with flowers of many colours; it requires a deep, strong, loamy soil, and to be left alone, for if moved often there will soon come a time when there remains nothing to move. *Anemone Japonica*, of which there are two varieties, the red and the white, both grand border plants for autumn flowering. *Anemone nemorosa* is our own wild wood anemone, one of the loveliest flowers in the whole world. The double variety makes an exquisitely beautiful rock plant. Have as many more as you like, but you must have the foregoing,

because they are distinct and good; but the word "good" is very poor in this connection. The anemone now before us is a "florist's flower," consequently you may, if you choose, form a collection to name; and time was when the named sorts realised prices running into gold, and at least two figures. But times are changed, and it is no longer necessary to have a deep purse to enjoy fine flowers.

The poppy or garland anemone appears to have been introduced in 1596, just in time to be included and faithfully figured in Johnson's *Gerarde* and other of the grand old books on floriculture. Parkinson enumerates sixty sorts of anemones, but these include plants that are far removed from *A. coronaria*. Mr. Carey Tysoe, of Wallingford, published some twenty-five years ago a treatise on this flower, with a list of the best varieties; and this must be regarded as a truly authentic work on the subject from the florists' point of view.

The poppy anemone varies in colour immensely, but its structural characters are constant. Experience has taught the writer exactly why the named varieties are not much cared for, and it is that seedlings can be easily raised, and will give abundant variety and fine quality, provided only that the seed is taken from first-class flowers. Now here comes in the argument for the florists' named sorts, however costly. In the subject now under consideration the cost is of no consequence, because named anemones are extremely cheap. But as florists' flowers are now much decried by people who know nothing about them, we feel bound to say that they serve the purpose of thorough-bred horses in stud stables, and of Duchess Shorthorns, and pedigree Jerseys, and Jonas Webb's fleecy lords of the flock. To the amateur who would

raise a nice lot of poppy anemones our advice is, begin with a collection of named varieties, save seed from these, and *then* go on gradually improving your specimens.

This anemone requires a rich, deep, well-drained, loamy soil. When raised from seed, sow in large pans or boxes in February, using rich, light soil, and place the seed-pans on a gentle hotbed. As the season advances give them more and more air, and let them finish their growth in full exposure. In September plant the roots in beds of light, rich loam in an open place, and wait for the result. It will gladden you in any case—it may even surprise you. When the leaves die, lift the roots, store them in paper bags or in boxes with dry sand, and every year plant in September, and every year raise a fresh batch of seedlings.





ABUTILON.



THE ABUTILON

Abutilon striatum.

T never rains but it pours" may be a suitable text for a discourse on the abutilon. Only the other day—say the day before yesterday—somebody discovered that the abutilon might by careful cross-breeding be made to yield a vast variety of characters and colours. Presto! Now there are dozens of new names and varieties, and they constitute attractive and interesting collections of decorative plants for festive dressings as well as for the quiet conservatory.

But as the florists multiplied the varieties they forgot the native inborn elegance of the plant, and were content to grow their named varieties in the form of diminutive bushes, certainly very pretty, but affording no idea of the proper splendour of the plant. Let us, then, turn from the new to the old fashion. The turn takes us into a snug conservatory, where the plants are allowed to show a little of the negligence of nature "wild and wide." Here the abutilon appears as a luxurious vine, with elegant leaves

divided into pointed lobes, and bearing curious bell-like flowers of a dull orange-colour, and curiously striped. It is singular that a South American tree should obtain an Eastern name, for abutilon is Arabic for mallow, and this plant is of the mallow tribe. It is the striped mallow vine of the Rio Negro and the Organ Mountains.

The common and comparatively hardy plant introduced from Brazil in 1837 as *Abutilon striatum* has been found to thrive in the open border as a wall-plant in sheltered spots in the south-west of England, but, generally speaking, the cool conservatory is the proper place for it. There it soon clothes the rafters with its elegant leafage, and it has the great merit of producing flowers during about nine months out of twelve. Any good soil will suit it, and in a town greenhouse, where the light is neither abundant nor pure, it will thrive as well as any good thing that may be planted.

The named varieties to which reference has been made have been raised from *A. striatum*, *A. venosum*, *A. Darwinii*, and *A. vexillarium* chiefly, and they comprise flowers of all colours, save shades of blue, and the prevailing tones are white, yellow, and red. Amongst them are varieties with richly variegated leaves, and these are not only of great value as conservatory plants, but are largely employed in what is called "sub-tropical bedding" in grand gardens, the trees being allowed to rise to a height of two to four feet, and being mixed with other plants of like growth to bring out the splendid colours of their leafage. This is all very fine and very wonderful, of course, but we are rustic enough to prefer the half-wild abutilon vine that we courted under to all the great sub-tropical beds of contrasted leafage that have been planted in both hemispheres.

About a dozen species of abutilon are recorded in the books, but only about half a dozen (or less) are really cared for by cultivators, because of the fewness of the flowers they produce. They are all of an accommodating nature, requiring only greenhouse temperature in winter and a fairly good soil of light texture, with rational watering. A little draught and a little damp will not kill them, and although none of them are, properly speaking, hardy, yet none of them are fastidious. To strike cuttings in summer is easy work, but those who soar high in abutilon culture must learn to graft or bud the rarer kinds on nice young stocks of *A. striatum* or *A. vitifolium*.

Of the varieties there are at least a dozen that deserve a place in every greenhouse. It is important, however, to select the most distinct and free-flowering, for they differ much in relative merit. The very best are the following:—*Anna Crozy*, the flowers lilac-pink, veined with white; *Chinois*, flowers large, pale orange-shaded red; *Darwini compacta*, bright rose, reticulated with crimson; *Le Grelot*, rose shading to magenta; *Louis Marignac*, delicate pink; *Princess Marie*, rosy lake; *Prince of Orange*, orange-red, veined with crimson; *Reine d'Or*, clear gold yellow; *Seraph*, pure white; *Tesarius*, brilliant red. The best of those with variegated leaves are *Darwini tessellatum*, *Niveum marmoratum*, *Sellowianum marmoratum*, and *Fexillarum variegatum*. These thrive in common soil, and are fine decorative plants for the summer garden.

The genus *sida* is nearly related to abutilon. It has been said that the species of *sida* flower with such punctuality that a complete dial of flowers might be constructed by the aid of the several species. Perhaps.

All the plants of this category yield a strong pliable

fibre; and during the Lancashire cotton famine the abutilons were made note of as possibly capable of helping us out of a difficulty. The cotton-plant (*gossypium*) is a mallow, and not very far removed in relationship from the plants now before us. Amongst the abutilons occurs one edible species, *A. esculentum*. In Rio Janeiro it is known as "Bencao de Deos." It is not the fruit but the flower that is eaten, and it is a somewhat common article of food with the people of Rio.





ROSE OF SHARON.

THE ROSE OF SHARON.

Hypericum calycinum.

AM the rose of Sharon, and the lily of the valleys. As the lily among thorns, so is my love among the daughters. As the apple tree among the trees of the wood, so is my beloved among the sons. I sat down under his shadow with great delight, and his fruit was sweet to my taste." Thus, in the "Song of Songs, which is Solomon's," the rose of

Sharon associates with luxurious vegetation, a happy frame of mind, an expectation satisfied, and is the symbol of a blissful inspiration. Sharon

is all that country west of Jordan that lies between the mountains of Central Palestine and the Mediterranean—a country comprising the pastures whereon David's cattle grazed—a country, too, of woods and waters, which might with propriety have been named Goshen, the Flowery Land. The rose of Sharon, therefore, must be a flower

renowned for beauty, or fragrance, or some special quality that would command the attention of a writer of holy song when his imagination sought for emblems wherewith to strew the banqueting house that was adorned with the banner of love. It is impossible for any one to determine what particular flower the text refers to. There are at least half a dozen species of wild roses in Palestine, and the cabbage and damask roses are, and for any length of time past have been, cultivated there. But the difficulty is for the lexicographers and the travellers first, and the botanists afterwards. The mallow produces gorgeous masses of colour in the plains of Sharon, and may be the "rose" that Solomon has so charmingly dignified. But the lily and the narcissus also abound there; and the word rendered "rose" in the English version is of such general application that it might in some cases be translated half a dozen different ways without any perversion of the spiritual or poetical purport of the text. Its association with the "lily of the valleys" suggests something different to either the rose or the *hypericum*, such as some shade-loving bulbous plant. Sir George Grove indicates his belief that the rose of Sharon was the "tall, graceful, and striking squill."

It was the opinion of Linnæus, in which he was supported by observant travellers, that a species of *cistus* is the real rose of Sharon. Our pretty *Helianthemum vulgare*, which produces most elegant yellow flowers, and thus forms rich carpets of gold on ledges of rock in limestone districts—notably in Bonsal Dale, Derbyshire—is the best representative, probably, we have of this view of the case. The particular plant, however, which Linnæus elected to the honour is *Cistus roseus*, a plant more

abundant in the eastern mountainous districts of Sharon than are any of the true roses, or than our rock-rose is on the limestone ranges of the midland and northern counties.

Thus we have got far away from the plant figured, although in gardens it is known as the "Rose of Sharon" and as "Aaron's Beard." Its claims to be called by the first of these two names are not entirely disposed of by the considerations already entertained. It is a woodland plant, and thrives under the shade of trees. It is not wanting in the flora of the Holy Land, and in Syria occur several species of *Hypericum*.

As a garden plant, *Hypericum calycinum* is especially serviceable to clothe banks and borders that are shaded by trees, as it spreads over the ground somewhat rapidly, and forms a rich surfacing of glossy leaves of a full green colour, which, in the later days of summer, are overspread by large, handsome, yellow flowers, with very many beard-like stamens. This plant will thrive in any good soil, and it is scarcely less healthy in the smoky town than in the country garden.

The common St. John's wort was a Druidical plant, and is still looked upon with superstitious reverence in many rural districts, as peculiarly fitted for a spell or charm. Many curious ceremonies are still performed in villages on Midsummer Eve and the succeeding morning, distinguished as the day dedicated to St. John. These performances have a peculiar interest to young maidens and bachelors, and like those of Halloween, in Scotland, are believed by the superstitious observers to lift the veil of futurity for the coming year, and enable the inquirers to prognosticate their lot for married or single life. These practices still prevail in many parts of the Continent.

In Lower Saxony the young girls gather sprigs of St. John's wort on the eve of St. John, and secretly suspend them on the walls of their chambers, with certain mysterious ceremonies. The state of the plant on the following morning indicates their future fate. If fresh and undrooping, it foretells a prosperous marriage; if fading and dying, the reverse. The plant is influenced by the condition in which it is placed, and those who have damp walls are the more likely to have prosperous marriages than those whose walls are as dry as they should be. There is wisdom in this; the sooner the former are married and comfortably housed, the safer are they from attacks of rheumatism. There is a pretty German legend of this superstition, the first six lines of which indicate its tone:—

“The young maid stole through the cottage door,
And blushed as she sought the plant of power.
‘Thou silver glow-worm, oh, lend me thy light;
I must gather the mystic St. John's wort to-night:
The wonderful herb whose leaf will decide
If the coming year shall make me a bride.’ ”

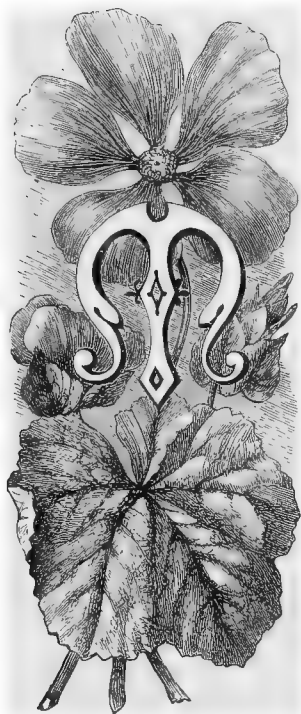




CRIMSON MALLOW.

THE CRIMSON MALLOW.

Malope grandiflora.



ALLOWS have a strong family likeness, and can scarcely be mistaken by one who has acquired a distinct impression of the flower of any one of the species. The mallow is a mallow of course, and the hibiscus, hollyhock, cotton-plant, and lavatera are also mallows, for they are members of the honourable order *Malvaceæ*, and vary from the type of the order in only slight degrees. The corolla is more or less salver-shaped, and the filaments of the stamens are combined into a tube, which forms a conspicuous and peculiar centre to the flower. The plant here figured, which is variously known as *Malope trifida* and *Malope grandiflora*, may be regarded for garden purposes as a representative flower, and the student of botany will

find it as useful as any to elucidate the characters of the Malvaceous order.

The plants of this order are all harmless, and many of them useful. Those best known for their usefulness are the marsh-mallow (*Althæa officinalis*) and the cotton (*Gossypium herbaceum*). The first, which in this country is chiefly regarded as an emollient, is in the East employed as an article of food, although it is only in times of scarcity that it acquires any degree of importance. It is cooked as a pot-herb, and eaten with whatever can be found to flavour it agreeably, as onions, garlic, &c. In Job (xxx. 1) we read of those "whose fathers he would have disdained to have set with the dogs of his flock," and whose wretched plight is indicated by their fleeing to the wilderness to "cut up mallows by the bushes." Dr. Hogg, in his "Vegetable Kingdom" (page 103), says the plant "grows in great abundance in Syria," and has no doubt about its identity. But Mr. Houghton, in Smith's "Dictionary of the Bible," reads the passage thus: "They pluck off the sea-orache near the hedges, and eat the bitter roots of the Spanish broom." The sea-orache (*Atriplex halimus*) constitutes a very acceptable kind of spinach when cooked, but it is scarcely, we think, such a plant as a company of starving vagrants would look for; and it may be advisable at this point to quit the subject. That mallows of certain kinds abound in all parts of the world, except within the polar regions, is certain, and that they should obtain the notice of ancient writers is, at all events, highly probable. When the question of Job's mallow is settled to the satisfaction of the reader, we commend to his consideration the frequent mention of mallows in Tusser's "Five Hundred Points of Good Husbandry."

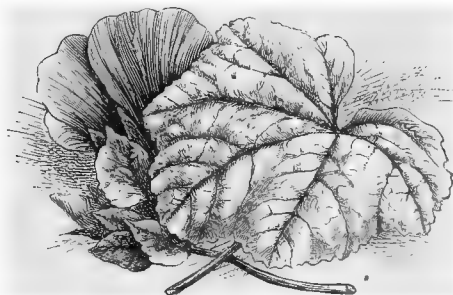
The order to destroy them, to root them out, &c. &c., occurs so frequently that we are bound to suppose mallows were more abundant on farm lands three hundred years ago than now. And the question will arise, What particular kind of mallow aroused the enmity of Tusser? We should assign the honour to the common mallow (*Malva sylvestris*), a rampant-growing, showy, and we may even say noble plant, with purple-tinted rosy flowers of the peculiar shade called *mauve*, which means simply mallow colour—the Latin *malva* being thus softened in passing into French.

The tree-mallow (*Lavatera arborea*) has of late years acquired some degree of importance, as supplying a nutritive cattle-food, and a fibre suitable for the paper-maker. In a report by Mr. Gorrie, published in the *Gardener's Magazine* for June 9, 1877, it is stated that the seeds can be manufactured into a cake scarcely inferior to that of linseed for feeding purposes, while the fibre is equally well adapted for manufacture into paper or cordage.

The plants of this family that are especially worthy of a place in the garden are *Malope grandiflora*, an annual of which there are two varieties, the crimson and the white; the hollyhock (*Althæa rosea*), a perennial herb; the tree-mallow (*Lavatera arborea*), a biennial; *Hibiscus Africanus*, an annual with yellow flowers; *Hibiscus roseus*, a tall herbaceous perennial with enormous purple flowers; and the truly splendid shrub, *Hibiscus syriacus*, more generally known as *Althæa frutes*. The last requires a dry sunny position and a somewhat sandy soil to make a grand display of its white, rosy, crimson, or purple flowers—for there are several distinct varieties—but it is not very particular as to position, provided it is not over-

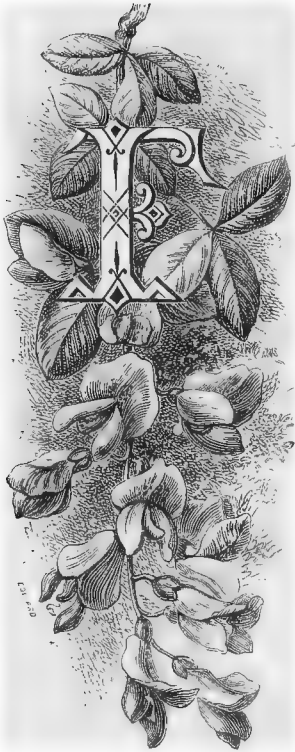
much shaded by trees. One of the grandest we have ever seen was a tree of the purple variety, in a garden which had formerly been a sand-pit, in the Rue de Morny, Paris. The tree stood, and probably still stands, in the midst of pleasant greenery, some twenty feet below the footway, on the right-hand side on the way out from the city, and was remarkable for its great size and the number and splendour of its purple flowers.

Returning to the marsh-mallow, we remember finding a bundle that had been hanging on the wall of a somewhat damp store-room for three years, and the shrivelled stems, brown and mouldy, were producing a few fresh and quite pretty flowers. This is the most striking instance, among many we can call to mind, of the continuance of vitality in some degree and in some part of a plant long after it had ceased to enjoy the advantage of connection with mother earth. Mr. Loudon, in illustrating the legend of the Glastonbury thorn, tells of a branch of the common thorn that "hung for several years in a hedge among other trees, and though without root, or even touching the ground, produced every year leaves, flowers, and fruit."





LABURNUM.



THE LABURNUM.

Cytisus laburnum.

FAMILIARITY does not breed contempt when merit and appreciation accompany it. Who could be so profane as to regard with contempt the laburnum when flowering gaily in the merry month of May, as a past Laureate put it, "dropping wells of fire"? One might think fountains of gold a better figure; but it is too dreadful to propose any improvement in the lines of such a bard, and we already feel as though guilty of a runaway knock.

The common laburnum, like the common thorn, is well able to brave the smoke of a city and subsist on the worn-out, sooty soil of the most dejected London garden. In the squares and open

places we see fine trees that flower gloriously; but occasionally we meet with pretty good examples in dirty holes and corners that seem to be utterly unfit for any kind of tree-life. But when we have seen these, and been

thankful that such bits of sunshine, as they seem, should drop down into nooks so needing them, and have then gone into the country and seen laburnums again, what a difference! In a really well-furnished country garden the laburnums are equal in splendour to any trees that are grown. Instead of calling them fountains we might call them mountains of gold.

The varieties of laburnum are not many, but they are interesting. The Scotch laburnum is generally regarded as a distinct species, and is named *Cytisus Alpinum*; but, in our opinion, it is a variety, and we have noticed other varieties that unite it with *C. laburnum* by a series of gradations. The most distinctive character of the Scotch laburnum is to be found in the seed-pod, which is glabrous, distinctly stalked, and winged along the upper suture.

The most remarkable variety is the one named *Cytisus Adami*, or *Laburnum Adami*. It is regarded as a hybrid between the yellow and the purple laburnum. If plants be allowed to have any sort of ideas of their own, we should say that Adam's laburnum belongs to the class of people who can never make up their minds what course to take in life, and so you can never calculate what they will do next. True it is that if this variety be grafted on the common laburnum the compound structure becomes the most ridiculous thing under the sun. In one part of the tree we shall see flowers of a good purple, in another part flowers of a dirty purple, and again in another part flowers of a bright yellow, and sometimes the three sorts are all closely associated and make a most absurd mixture. If we mark a branch that bears purple flowers, and watch it the next season, we may chance to find it then producing yellow flowers, and *vice versa*; and the vagaries of the graft run

down into the stock, just as a man's giddy thoughts run to his heels and make him dance.

An equally curious but by no means ridiculous variety is the golden-leaved laburnum. This is a splendid tree, with leaves of the brightest orange-yellow colour, and makes a most conspicuous feature in the woodlands all the summer through. This is propagated by grafting it on the common laburnum, and when the graft takes and grows there is a good tree formed, and, however we may admire it, we are not called upon to arouse the organ of wonder. But it is a different case when the graft does not take. You must know that out of a given number of grafts inserted on suitable stocks a certain proportion will perish. It is with grafts as with seeds—they do not all “come up.” Now, generally speaking, when a graft fails there is an end of it, and if the stock is left alone it will usually sprout in time and grow in its own way, whatever that way may be. But it is otherwise in this case, for the common green-leaved laburnum stock, from which the graft has been removed by violence or death, will produce golden leaves of its own—a case of genuine inoculation. There is a golden-leaved jasmine that exercises some such influence when grafted on the green-leaved jasmine; but the cases are not quite parallel.

There are in cultivation about twenty varieties of laburnum, but none are more beautiful than the common one that may be found in every garden. The pendulous variety (*L. pendulum*) is one of the most distinct, and the sweet-scented (*L. odora*) and the white-flowered (*L. flore albo*) are worth the attention of those who have a taste for interesting trees.

It should never be forgotten that the seeds of the

laburnum are poisonous, and occasionally prove deadly to children and cattle ; therefore it is not well that a laburnum should overhang a grass field, or have a place in a school-garden or near any playground. Hares and rabbits are so partial to this tree that it may be turned to account for the protection of plantations. A certain proportion of laburnums being sown, the ground-game will eat them down in the course of the winter ; but the trees will be renewed from the roots in the spring, and thus, by supplying food at times when the animals are hard-pressed, may tend to the preservation of more valuable timber.



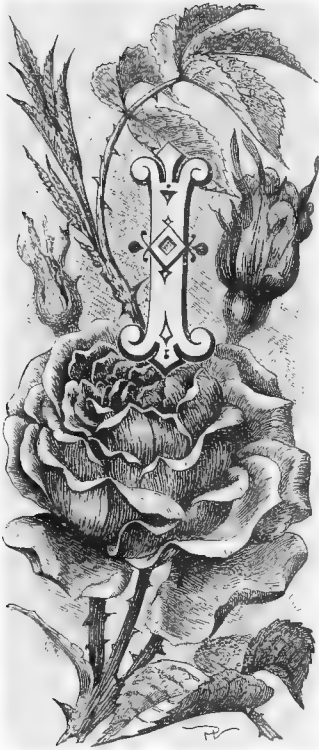


ROSE.

THE PERPETUAL ROSE.

Rosier Hybride Remontante.

Rosa hybrida semperflorens.



It appears in the nature of a duty to be sentimental when there is anything to be written about roses; therefore, in order to be heterodox, we propose to be businesslike, and refrain from gushing. The flower figured is one of the so-called "perpetual" class, with a decided preponderance of the blood of the China rose. The hybrid perpetuals have been produced by crossing and re-crossing the China and Bourbon races until a tolerably distinct class has been produced, but the evidences of their origin are for the most part plainly manifested in their more prominent characteristics.

The hybrid perpetuals are the most useful of all roses, and may be said to combine in themselves the best qualities of all the best garden roses, for in a certain number we have the rich scent of the "Provins"

combined with the handsome foliage and full rich flowers of the two great sections that have mainly contributed to their production.

In forming a plantation of roses it is desirable to plant a fair proportion of dwarf bushes as well as of standards, and it is a great point to secure those bushes "on their own roots"—that is to say, the plants should have been raised from cuttings, and not by grafting or budding, as is necessarily the case with standards. If amateurs would lean towards own-root roses, and abandon the custom of planting standards chiefly, they would considerably augment their garden pleasures, for the many disappointments that the inexperienced have to endure in the growth of roses are, in great part, attributable to the prevailing belief in standards as the best form in which to grow the "queen of flowers." This is a very important matter, and one but little understood. If own-root bushes cannot be secured, those grafted on the manetti stock may be planted to form bushes, and a watch must be kept upon the suckers that rise from the root-stock, because if these are allowed to grow, the plantation will soon become worthless. But own-root roses may be allowed to throw up suckers, for they are necessarily all of a piece, root and branch, and it is their nature to renew themselves, as do raspberries and blackberries, by the production of strong shoots from the root. This power of renewal from the root is necessarily destroyed by grafting and budding on brier stocks, and thus the artificial form of the tree has an insecure tenure of existence.

The best soil for roses is a deep, rich, and rather moist loam. Almost any fairly good soil will grow roses

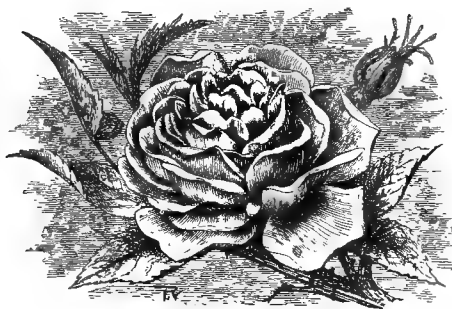
of some sort, but for vigorous growing varieties that should produce large and very double flowers, the soil must be loamy and liberally manured. The standard roses, being on the English brier, need a rather stiff soil, which should be deeply dug for them and very liberally manured. Therefore those who live in clay countries may indulge in standards, and they may be advised always to give the preference to vigorous growing sorts, and to plant trees with good heads in the first instance. It is a pity to disfigure a garden by planting long sticks with a few little ugly twigs at the top, for those starvelings rarely become fine plants, and if they are ugly in the first instance they are likely to become more ugly with lapse of time. Where the soil is thin and stony and dry, the best form of rose is the "manetti"—that is to say, those that are grafted on the Italian brier bearing that name, for this brier can endure the trials of a poor, light soil, better than the English brier. But a good garden soil that has been well prepared will produce good roses in plenty, whether they be on English briers or Italian briers or own-roots.

The rose is a thirsty plant, but it will not thrive on a soil that is sour with stagnant moisture; therefore good drainage is an aid to success. But a moist soil is to be preferred to a dry one, and during long-continued drought roses of all kinds should be abundantly supplied with water.

The principal enemy of garden roses is the *aphis*, or "green fly." If this is allowed to riot on the tender young leafage, the vigour of the plants is destroyed, and we may not only expect the flowers to be few and small, but we may really lose the plants entirely, for

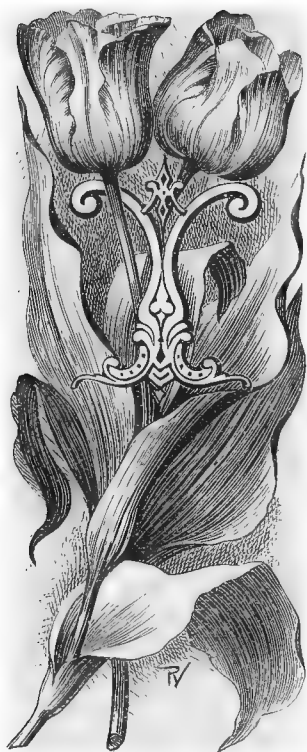
roses are somewhat decisive in their behaviour, and die if they find life not agreeable to them. The best preventive and the best eradicator of the green fly is water, which should be applied to the roots to promote vigorous growth, and overhead in frequent copious showers to wash the fly out of existence. Tobacco-powder is a very cleanly and effectual fly-killer, as it needs only to be dusted on the young leaves and shoots, and may soon afterwards be washed off by means of the syringe.

Roses should be planted in the autumn and winter. If the work cannot be done until spring, the roots, when planted, should be mulched over with a good body of half-rotten stable-manure, and during the months of May and June following they should be aided with water overhead and at the roots. If dwarf roses can be purchased in pots, they may be planted in April and May.





TULIP.



THE TULIP.

Tulipa Gesneriana versicolor.

O speak wisely of the tulip in four small pages of large type—how is it to be done? It can only be done, if done at all, by concentrating attention on matters of practical importance and ignoring matters that a lover of flowers may be ignorant of to advantage. This is the preface.

Tulips have been cultivated from time immemorial, but the so-called tulipomania is of too recent a date to have acquired the flavour of antiquity. It was at its height from 1634 to 1637, and was soon over; like any other bubble, it was too thin and too hollow to last. The records of

its extravagances tax our powers of belief, but few histories of mistakes and follies are so amply illustrated with evidence we cannot dare to question. In the register of the city of Alkmaar, 1637, is an entry of a sale of tulips for the benefit of the Orphan Hospital, when 120 bulbs were sold for 9,000 florins, and one of these—the Viceroy—

brought 4,203 florins. A florin then represented a bushel of wheat, and by this standard the value of the single bulb may at any time be estimated in current money. With wheat at 50s. the quarter, the equivalent in money would be about £1,314. Beckmann relates that about half an ounce weight (400 perits) of the variety named Admiral Leifken was sold for 4,400 florins, and half that weight of *Semper Augustus* realised 5,500 florins. In the "History of Inventions" the story is fully and amusingly told, and we should but waste our space in attempting to repeat or summarise it. But we must warn all that the florists had nothing to do with it. The gamblers and speculators knew nothing of the flowers but their names and the latest prices realised. A certain number of Dutchmen had gone mad, and another body of Dutchmen were ready to profit by the event. If the history casts any reflections of an unpleasant nature, they do not fall on the florists in particular, but on human nature in general.

The class of tulips in which the florists take especial delight are not, generally speaking, costly; but the difficulty of obtaining them, in the first instance, the peculiar nature of their special technical merits, and the slow rate at which, in many cases, they are multiplied, combine to invest them with a considerable money value during the early years of their appearance. In this respect they are like other commodities, but the demand, though limited, being pretty constant, the money value of tulips does not fluctuate with anything approaching to violence. Within the experiences of the present generation, the highest price offered for a single bulb was £100. Mr. Goldham refused an offer of this amount for a bulb of Louis XVI.

The highest catalogue price of a single bulb in late years is £20, this being the sum named by the late Mr. Lawrence for a bulb of Charles Williams; and it might be that the variety was entered at a higher price than any one would pay to keep down the demand until a reasonable stock could be secured by propagating. In the catalogue of tulips issued by a well-known florist there are 234 sorts named. The highest price for any one is 63s., and at this price there are three entered—namely, Everard, Duchess of Cambridge, and Gem of Gems. A considerable number of noted sorts are entered at from 2s. 6d. to 5s. each; and the aggregate of the prices of the 234 sorts is £51, less 6d., or an average of a fraction under 7s. each. A thoroughly good bed of tulips may be purchased for £60; and those who enter upon tulip culture cautiously and with good judgment may in a few years accumulate a collection of real merit at considerably less cost than will appear from these considerations.

But the lover of gay garden flowers need not enter into these considerations, for the early tulips, which the florists do not recognise, are better adapted for grouping in beds and growing in pots for the conservatory than the late or exhibition tulips; and the best of these may be purchased at 15s. per 100, and if named varieties are not wanted, for half that rate. As the history led us into the money question, it appeared a matter of duty to intimate that a short purse might cover a long list of tulips. But here we must quit the subject, and this completes the history.

In this country tulips are found to thrive best in sandy loam enriched with a moderate amount of rotten hot-bed manure and leaf-mould. A rank soil, such as would suit cauliflowers, is above all things to be avoided, and wherever

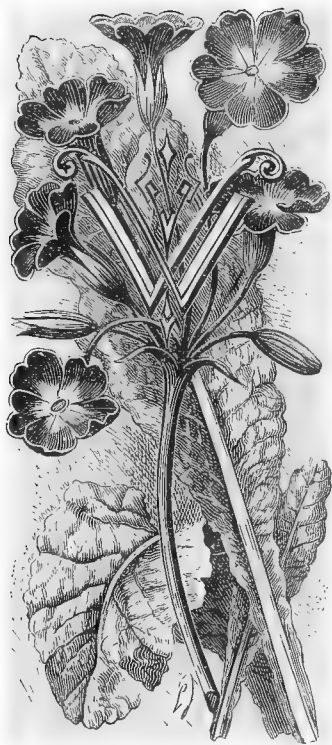
sand is cheap it should be used in plenty. In Holland, tulips are grown for the market in a dark-coloured peaty sand, of so loose a texture that the workmen have to wear sand-shoes, which are like little tea-trays tied to their feet, to prevent them sinking into it. This sand is first enriched with cow manure in very considerable quantity, and is then planted with potatoes; the next year it has no manure, and is planted with hyacinths. The next year again it has no manure, and is planted with tulips.

In selecting tulips, the catalogue of a trading florist will furnish ample guidance, and the prices will show how to cut the coat according to the cloth. The Van Thol section flower earliest and are sweet-scented, and therefore invaluable for the table and window. The early single and double are the most useful for the parterre and for growing in pots for the conservatory. The late, comprising more especially *Gesneriana* and the "Rose" section of the florists' tulips, are fine for late beds and for the fronts of shrubberies.





POLYANTHUS.



THE POLYANTHUS.

Primula elatior.

WHAT is the difference between a primrose and a polyanthus? There is a great difference apparently, for one is catalogued as *Primula vulgaris*, and the other as *Primula elatior*. The ready answer is, that a primrose has one flower on a stalk, but a polyanthus has many. It happens, however, that primroses are produced in clusters, as polyanthus are, but they appear to be produced singly, because the stem that carries the cluster is very short, and the secondary stem, or peduncle that carries the flower, is very long. Now and then a common primrose determines to explain

the case to the young botanist, and then we see a stout stem bearing on its summit a cluster of primroses. These are called polyanthus primroses, and, generally speaking, they are scarcely so pretty as the (apparently) single

stalked common primroses. But how comes all this colour into the polyanthus, if it is but a primrose, seeing that a true primrose is always of a pale yellow colour? But, then, a true primrose is not necessarily of a pale yellow colour, for we have them of all colours, from pure white to deep yellow, and from pale rose and lavender to crimson and purple-blue. On one occasion I sat down in the park at Bicton to gossip with my old friend the late Mr. James Barnes, and the knoll of wild herbage we selected for our symposium was dotted with primroses of at least a dozen colours, some being brown or slaty, but others lively rose, full purple, red, and the most delicate lilac. Therefore, as to the growth and the colouring, it will not be difficult for the observant gardener to believe that the primrose and the polyanthus are but forms of the same species, owing a common origin in the type named by Linnaeus *Primula veris*.

There are two distinct classes of polyanthus. The bedding and border kinds have flowers characterised by gay colours; the florists' or exhibition polyanthus have dark maroon or black grounds, and a rich gold lacing. On the roundness, smoothness, velvety texture, and sharpness of the lacing depends the relative merit of the show varieties, which are valued highly by the few florists who understand and appreciate them.

The polyanthus requires a rich loamy soil. It will thrive on clay if well managed; moisture is conducive to the health and free flowering of the plant, and it bears shade well, but if heavily shaded, and in a damp situation, becomes coarse, and the flowers are comparatively few and wanting in colour. The only way to multiply named varieties is by division, which is best accomplished in the month of

August, but may be performed with more or less success at any season. A ready mode of raising a stock is to sow seeds in pans of light rich soil, and to keep them in a frame, or a shady and rather damp place, until the plants appear. The seed is very capricious in its behaviour, for if sown when quite fresh and kept damp and dark, it will sprout up in ten or twelve days; but old seed will remain dormant for months, perhaps even for a year, and then grow freely and produce nice healthy plants. It is a point of very great importance to cover the seed with the thinnest possible dusting of fine soil, and it is advisable to cover the seed pan with a sheet of paper or a sprinkling of moss, which, of course, must be removed when the tender green herb appears.

There are some brilliant strains in cultivation as bedding plants, and they have been employed with singular effect in the London parks. These are all raised from seed, and when the flowering is over the plants are destroyed; thus it becomes necessary to save seed every year from the best plants, and to have successive batches of seedlings to maintain the annual display.

On dry sandy soils, and in hot arid situations, the polyanthus is comparatively worthless. It is a flower of the valleys, and loves comfort, but cold is never so harmful to it as heat, and in any case where the plant is tried by drought or heat it should be aided by shading and systematic watering.

The primrose, polyanthus, oxlip, and cowslip are so nearly related that it is a difficult matter to define them nicely; but the definition is of little consequence to the lover of flowers, however important it may be to such as "allium call their onions and their leeks." Let us, however, be

particular for a moment. There are three forms of *Primula* common in this country, and they are considered variations of one type, which, as remarked above, is called *Primula veris*. These three forms comprise the primrose (*Primula vulgaris*), the oxlip (*Primula elatior*), and the cowslip (*Primula veris*). For all practical purposes we may regard these three forms as distinct species; and it will be seen that the polyanthus is the second of the series. The oxlip differs from the cowslip in having a shorter and stouter stem, and a broader and flatter corolla—qualities that commend it to the attention of the florist, who does not fail to note also that it is delightfully variable, and when well grown will continually reward him with new colours and distinctive markings. Thomson, in his “Spring,” speaks of—

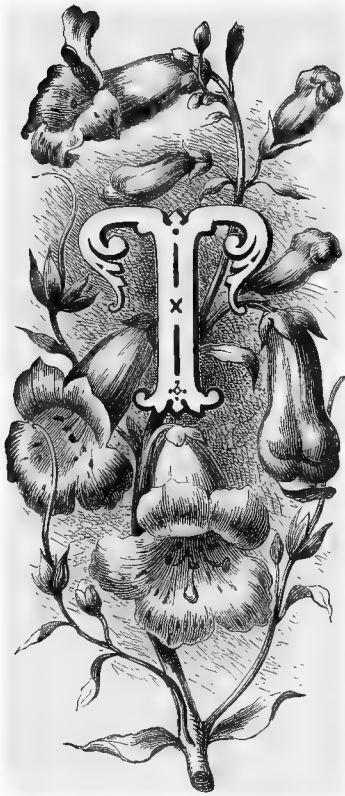
“The polyanthus of unnumber’d dyes.”

In the *Midsummer Night’s Dream*, Shakespeare makes special reference to the red spots that adorn the centre of the cowslip, in the merry song “The Fairy” (act ii., sc. 1).





PENTSTEMON.



THE PENTSTEMON.

Pentstemon gentianoides.

HE pentstemon has no history, and it would be a trying task to find a sonnet in praise of its beauty, for if there be one in existence it must be buried deep in the recesses of unknown literature. The generic name affords a rare example of common sense in botanical nomenclature. It tells us that the flower has five stamens, such being the exact meaning of pent-stemon. It is unfortunate, perhaps, for such a charming and peculiarly useful flower to be of American origin, and introduced to Europe only within the present century.

It is thus separated from the superstitions and fancies and usages that render certain flowers famous in literature and art, and bring them into the very midst of our domestic sympathies and affections. What a history, for example, has the violet! That has been from the

beginning of the world flowering by the wayside, in the midst of observant and imaginative men, and they have woven it into the web of their social relations so completely that it is not only a familiar flower, but a symbol of deep significance, and an emblem, too, of many thoughts and virtues. The pentstemon is a new flower from the new world; that is to say, it was created at the same time as the violet, but has quite lately been discovered, and perhaps there is needed the observation of centuries to create a history for it and make it a representative of feelings and fancies of the tender kind that usually underlie a genuine love of flowers.

Two or three species of pentstemon were known to English gardens at the close of the last century, but the majority of the kinds that have obtained favour have been in the country only some fifty years or so. The most important is *P. gentianoides*, introduced from Mexico in 1846, as from this a considerable proportion of the cultivated varieties have been obtained by crossing with *P. cobaea*, introduced in 1835, and *P. diffusum*, introduced in 1826. There are about fifty species known, and all of them are located in the central and southern parts of the United States and the more temperate parts of Mexico. In addition to the three just named it may be proper to mention, as worthy of attention, *P. acuminatus*, with reddish-purple flowers; *P. Wrighti*, with flowers rosy carmine; and *P. speciosus*, with fine flowers, which are usually of a rich blue colour, but are liable to variation. The colours that prevail in the pentstemons are shades of red, blue, rose, carmine, and white; there is somewhat of a tendency to the production of ineffective shades of colour when the species are crossed and seedlings are raised in

quantity. But the ineffective kinds are easily got rid of by the simple process of destroying them; and when the seedlings are judiciously selected, we have as the result a race of flowers resplendent in beauty, and of immense interest because of their never-ending variations. To the florist one great source of charm is this tendency to variation. It matters not how beautiful a flower may be in its original state if it refuses to undergo modifications when cultivated. The great hope of the florist is to work changes on the types that nature offers to his notice, and when he finds this cannot be done his interest is diminished; and, in fact, there is no such thing as a "florist's flower" that is everywhere and always alike. The very essence of floriculture is to be found in floral mutation, although there must be something more than that to ensure for any flower a lasting popularity. The pentstemon varies delightfully, hence there is great pleasure to be found in raising seedlings, and the few who have hitherto practised this system have had a great run of good luck in securing varieties of fine character and good constitution.

The pentstemon belongs to the section of Figworts (*Scrophularineæ*), and has for near relations the calceolaria, schizanthus, verbascum, antirrhinum, paulownia, chelone, digitalis, and mimulus—a most interesting lot, but as regards their qualities rather suspicious, and but rarely of any important use either in medicine or the arts. The best known in respect of utility is the foxglove (*digitalis*), which affords a powerful drug, and may properly rank as the finest of all our British wild flowers. It is sometimes spoken of as the British gloxinia and the British pentstemon, and in the range of the colouring of its flowers it comes near to the beautiful plant before us.

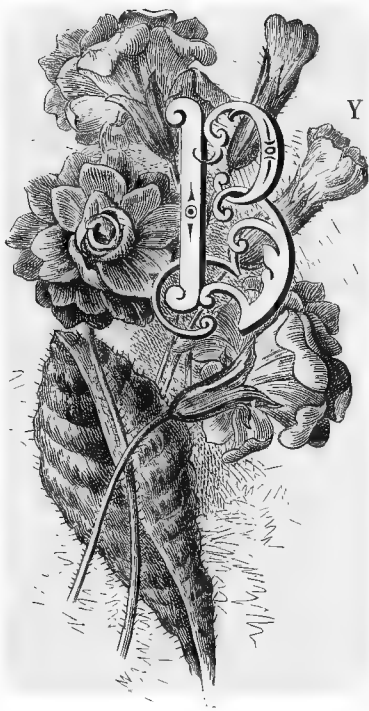
The pentstemon requires a rich deep soil and an open sunny situation to ensure a full display of its beauties. It is a thirsty plant, and therefore in dry weather should be liberally supplied with water.

The best way to ensure a fine show of flowers is to purchase named varieties, and to raise a fresh stock of plants every year by striking cuttings in August and September. These should be kept in a frame or pit through the winter, and be planted out in April and May where they are to flower. Speaking generally, the treatment given to bedding calceolarias will suit them perfectly. When grown from seed, the seed should be sown in February, and have the help of a gentle hot-bed to start them. The plants may be brought on in a cold frame, and put out in beds in the month of May.





DOUBLE PRIMROSE.



DOUBLE PRIMROSE.

Primula vulgaris var.

Y the ridiculous title *Primula vulgaris* var. you are to understand that the plant before you is a garden variety of the common yellow primrose. That being settled, we hereby record that the variety figured is in some gardens labelled "Alfred Dumesnil;" and assuredly it deserves a label. Primroses, single and double, are the most familiar of garden flowers, but they are coy beauties, and require coaxing. The happy appearance of the primroses in gardens will suggest to the uninitiated that it is

a most easy matter to manage them. Well, so it is, when the conditions are favourable, for, in fact, they manage their own affairs with the most perfect success imaginable. But they are, we repeat, coy beauties, and one reason why you see them looking happy in gardens is that when

they are unhappy they shuffle off their mortal coil very quickly, and are thereafter not seen at all.

There are fully thirty garden varieties of primroses worth growing, comprising single and double flowers of all colours except true blue. They are all beautiful, but the double white, double lilac, and double red are exquisitely lovely, and worth any amount of trouble to insure a free growth and a perfect bloom. But observe, further, that they require a deep moist loamy soil, a partially-shaded situation, and to be often looked at, or they will not thrive. It must be remembered, also, that these flowers require a comparatively pure air. They are not town flowers, and therefore in a town garden one rosy pyrethrum is worth fifty primroses, whether single or double. But not a poor soil, not a smoky atmosphere, not a full blaze of summer sun is so decidedly deadly to these plants as dryness at the root. A dry soil is fatal to them, and therefore when there is any doubt about their doing well, be careful to water them freely all through the summer season. As remarked before, they require a deep moist loamy soil, but they will thrive in clay, sand, or peat, if in the original arrangements it is kept in mind that a free rooting ground and constant moisture are essential. If you propose to grow these plants on poor sand or stubborn clay, you have but to dig deep, break up the staple well and mix with it a liberal allowance of fat manure, and the rest is easy. They must have food, they like shade and moisture, and when quite happy in their circumstances they grow "like weeds."

The multiplication of the choicer kinds of primroses is effected by division, and the months of May and June are the most suitable for the operation, because there is a long

growing season before the plants to enable them to become established before they are called upon to make a show of flowers. But there is great danger of the destruction of the stock when inexperienced cultivators divide their plants in summer, and our advice to all such is to leave them undisturbed until they become large thriving clumps, and then to divide them in the month of August. In the meantime give them liberal supplies of water in dry weather, and if the soil is known to be somewhat poor, give weak liquid manure once a week all through the growing season. Be not alarmed at the fast growth of the leaves, for in proportion to the leaf-growth in summer will be the splendour of the flowers in the succeeding spring. All the hardy primulas are happy on the lower shelves of a good rockery, but our *Primula vulgaris* in all its forms is a border flower if need be, though best at home in the shady parts of a half-wild garden where foxgloves, and large-leaved saxifrages, and Solomon's seal, and day lilies are at home, with perhaps glorious tufts of male fern and lady fern, and royal Osmund, and the most delicious *Equisetum sylvaticum*.

The primrose was always dear to the sentimental, and has been well cared for by the poets. Well indeed is its advent described in Kirke White's poem beginning—

“ Wild offspring of a dark and sullen sire !
Whose modest form, so delicately fine,
Was nursed in whirling storms
And cradled in the winds.”

Then there is Mrs. Hemans's poem, of which this is the first stanza :—

“ I saw it in my evening walk—
A little lonely flower ;
Under a hollow bank it grew,
Deep in a mossy bower.”

Clare's cheerful lines begin with a welcome that touches the heart of every reader—

“ Welcome, pale primrose ! starting up between
Dead matted leaves of ash and oak, that strew
The lawn, the wood, and spinney through,
Mid creeping moss, and ivy's darker green.”

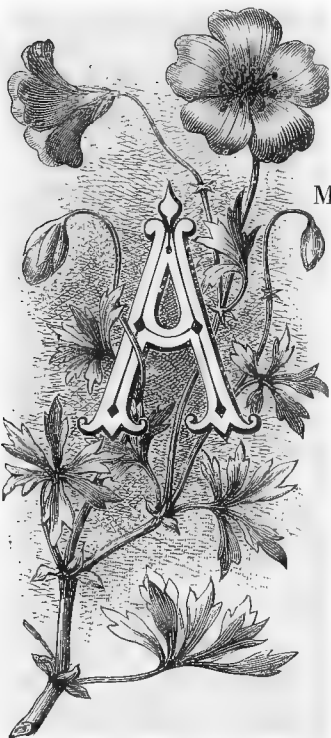
And, to give one more quotation, there are Herrick's lovely lines to primroses filled with morning dew—

“ Why do you weep ? Can tears
Speak grief in you
Who were but born
Just as the modest morn
Teem'd her refreshing dew ? ”





WILD GERANIUM.



THE WILD GERANIUM.

Geranium sanguineum.

AMONGST the many British plants that have found a permanent home in the garden, none is more worthy of it than this. A happy tourist who may trouble to keep his eyes open while riding by rail from Furness to Whitehaven may obtain without cost a good practical lesson on the cultivation of this beauty. On nearing St. Bees there will be seen in the months of July and August vast sheets of crimson flowers, in some places running up into the sandhills, in others coming down to the railway line, and actually touching the rails themselves. The intensity of the colour of these flowers and their exceeding profusion constitute a great surprise for one versed in plants, but not often privileged to see *Geranium sanguineum* in its highest state of development.

And this lesson is of larger value than may at first

appear. Fully nine-tenths of all the smaller flowering plants that are prized in gardens belong to sandy, calcareous, or peaty soils. A very small proportion, and those of a somewhat rank habit of growth, belong to the heavy loams and the deep clays. Those smaller plants with large and lustrous flowers love light, moisture, pure air, a free soil, in which their roots can run freely; but stagnant moisture at their roots and a pasty soil are unfavourable to their full development, and sometimes forbid them to live. Thus we have explained to us that in the London garden, and in any other garden where the soil is heavy and damp, and the atmosphere particularly impure, this crimson geranium becomes rank in growth, and produces but few and pale-coloured flowers. And the final lesson, for the present, is, that in forming rockeries for such plants, we must insure perfect drainage, so that the soil may never be water-logged; and provide for the principal bulk of the smaller plants a soil consisting of sandy loam, mere siliceous grit being in many cases necessary to their well-being.

Our wild geraniums are a pretty lot, and find favour with the cultivators of rustic plants. In the books the geraniums are classed as crane's-bills, to distinguish them from pelargoniums, which are stork's-bills, and the erodiums, which have heron's-bills; these descriptive names referring to the resemblance of the seeds to the long-pointed bill of a bird. The dusky crane's-bill (*Geranium phæum*), the knotty crane's-bill (*G. nodosum*), the meadow crane's-bill (*G. pratense*), and the shining crane's-bill (*G. lucidum*) are all good garden plants, the last but one in the list being remarkably handsome when well

grown. The meadow crane's-bill loves a rich damp soil, and is often semi-aquatic. One of the best places in the world to see it in perfection is Darley Dale, Derbyshire; but it is more often seen in the Yorkshire dales, and is not uncommon in Cumberland. The smaller and more alpine-habited crane's-bills, like the crimson one that gives occasion for these remarks, require a sandy and stony soil. The shining crane's-bill is often seen on ruins and cottage roofs, showing how it loves a dry situation. The Herb-Robert (*G. Robertianum*) is of similar habit, loving the rocks, and making a most delicate display of colour on them.

Amongst the hardy geraniums that may be added to the foregoing to make a small and interesting collection, the following are of special value for their beauty:—The grey crane's-bill (*G. cinereum*), the iberian (*G. ibericum*), the long-rooted (*G. macrorrhizum*), Lambert's (*G. Lamberti*), the broad-petalled (*G. platypetalum*), and the striped (*G. striatum*). These are all showy plants of accommodating constitution, thriving best in deep sandy loam. The best geranium for London is probably the white-flowering (*G. aconitifolium*), which forms a stout bush, and flowers abundantly.

A selection of erodiums should come in here, for whoever cares to grow one lot will not the less care to grow the other. The best of them for the garden are the showy heron's-bill (*Erodium manescari*), the fairy heron's-bill, (*E. Reichardi*), the Roman (*E. romanum*), the rock (*E. petræum*), and the caraway-leaved (*E. caruifolium*). These require, like the last-named group, a dry sandy or calcareous soil, and full exposure to air and sunshine.

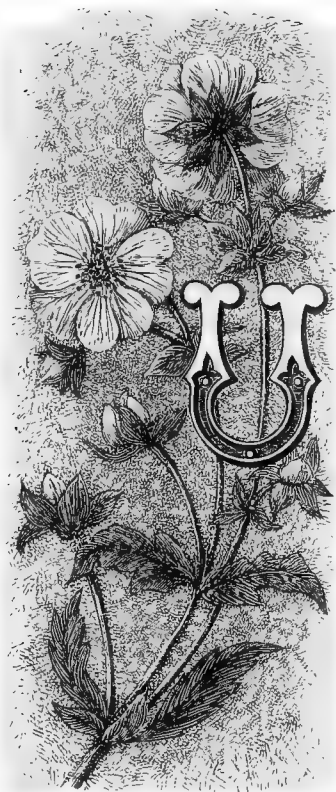
The amateur who has become interested in the hardy

geraniums will in due time sigh for hardy pelargoniums, and it happens that there is one that may be so called, for it is a frame plant in London, but will endure the winter in the open border in favourable parts of Devonshire and Cornwall. This is *Pelargonium endlicherianum*, a very interesting plant with distinctive leafage, and curious flowers that appear to have but two petals, for the remaining three are so small as to be practically invisible. A genuine lover of plants will find much to interest him in the ways and manners of this hardy pelargonium. There is yet another that is so nearly hardy that frame-culture will generally suffice for it, and as regards interest it surpasses the one just named. It is *Pelargonium triste*, the melancholy stork's-bill, the flowers of which are fragrant at night only.





GARDEN AVENS.



GARDEN AVENS.

Potentilla alpestris.

UNDER the genus *Geum* a garden avens should certainly be ranked, but this, though very nearly allied, is not strictly an avens, but a cinquefoil, and its botanical name is *Potentilla alpestris*, otherwise the orange alpine cinquefoil, occasionally registered as *Potentilla salisburgensis*. It is also known as the mountain cinquefoil, and may be looked for hopefully on mountains in the north of England and North Wales, and on the Breadalbane and Clova mountains in Scotland. Where it occurs

there will usually also be found the smaller spring cinquefoil, *Potentilla verna*, a very variable plant, which is often so like this *P. alpestris* that by many botanists the two are considered as forms of one and the same species. They are proper plants for the garden, and more especially for the rockery, needing always a moist soil and a sunny

situation. The indented petals, the acute segments of the calyx—which sometimes exceed the length of the petals—the five-divided root-leaves, and three-divided stem-leaves, are signs by which this pretty plant may be known, and of which *P. verna* may be regarded as a small edition. Another near relation is *Potentilla anserina*, or goose-grass, a most beautiful plant, that geese have the good sense to appreciate, for they eat it, as the books say, “with avidity.” The roots of this potentilla have been eaten as bread in times of scarcity in Northern Europe, and in places where the plant grows with vigour they are worth cooking as a table vegetable. As a garden plant *Potentilla anserina* has considerable merit; its silvery leaves are beautiful, and the yellow flowers are peculiar in texture, and their colour singularly pure. *Potentilla splendens* and *P. gracilis* closely resemble *P. alpestris*.

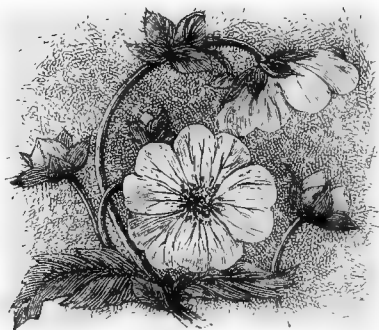
Having thus stumbled into the midst of the potentillas, we shall embrace the opportunity to recommend *P. pyrenaica*, a fine plant, bearing golden flowers; *P. nitida*, a silvery-leaved plant with extremely pretty rose-coloured flowers; and *P. calabrica*, also silvery-leaved with yellow flowers. But the glory of this family is *P. atrosanguinea*, the blood-red cinquefoil, that the florists have toyed with until they have secured many showy varieties with scarlet, crimson, orange, and purple-coloured flowers of the most brilliant character, and all of them adapted for growing in the common border. The common avens, or Herb-Bennet, of the English woods, *Geum urbanum*, although not good enough for the garden, bears a near resemblance to the plant before us. At certain times it is decidedly pretty, but its petals fall so soon that, unless we see it in a certain state of

freshness, which lasts but a short time, we fail to find the attractions which appear to have satisfied the plant-collectors of a former age. Its seeds are usually more conspicuous than its flowers, in consequence of the awns that bristle around the tiny ball. What it lacks in beauty it makes amends for in sanctity, for the Herb-Bennet, or *Benedicta*, was a favourite subject with sculptors and painters engaged in church decoration. Its importance arose out of the belief, as stated in "*Ortis Sanitatis*," that "where the root is in the house the devil can do nothing, and flies from it; wherefore it is blessed above all other herbs." Naturally, this came to be one of the amulet plants, that protected its wearer against "venomous beasts." The legend of St. Benedict sets forth that a wicked monk offered the saint a glass of poisoned wine for the purpose of destroying him. But the saint blessed the wine, and the poison, being a sort of devil, flew out of it with such force that the glass was shivered to pieces. Those who cannot refer to "*Ortis Sanitatis*," which is a scarce old book, may have at hand Mrs. Jameson's "*Monastic Orders*," wherein will be found the story of St. Benedict.

It is singular that in the arrangement of the rosaceous order that prevails, the geums and potentillas come between the brambles and the roses, being separated from the spiræas, to which, in general conformation, they are so nearly allied. Not far removed is a plant that bears a strong likeness to a potentilla, both in its divided leaves and yellow flowers. This is the agrimony, a woodland plant of considerable interest, and not without beauty, insomuch that if it chances to make an appearance in the garden one has not the courage to pull it out. This

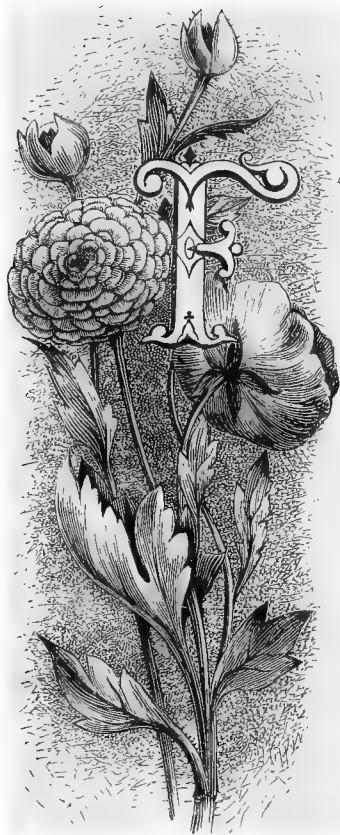
also was a plant of renown for its virtues, and is now sought as an ingredient for herb-tea. The problem for the young botanist is to establish to his own perfect satisfaction its relation to the roses, and then to trace out the several connecting links, and the signs that separate them.

The white cinquefoil (*P. alba*) and the creeping cinquefoil (*P. reptans*) may be added to the list of desiderata for the rockery; but, as remarked above, the florists' section of *P. atrosanguinea* are those that will contribute most forcibly to the glory of the garden, for they are among the very best of border plants. A selection of the most showy should include the following:—*Aurora plena*, double orange; *Dr. Andry*, orange and scarlet; *Coccinea*, crimson; *Hopwoodiana*, white and pink; *Insignis*, yellow; *Louis Van Houtte*, crimson; *Russelliana*, scarlet; and *Sudbury Gem*, crimson. They are so cheap, and make such a brilliant show, that a special compartment may be devoted to them advantageously, in which case a larger collection would be required than those named above.





RANUNCULUS.



THE RANUNCULUS.

Ranunculus Asiaticus.

ASHION may be allied to folly, but it is often the concrete expression of inevitable circumstances. Flowers become fashionable, and after a time they become unfashionable, and in certain particular cases that have been inquired into it was discovered that the determining cause was not to be found in man so much as in nature. When for several years in succession certain flowers have, through unfavourable weather, failed to reward their cultivators and admirers, those same flowers have gone out of fashion, although what we properly understand as fashion had little or nothing to do with

it. The hollyhock has of late years been out of fashion, owing to the prevalence of a destructive fungus which first disfigures the plant and finally destroys it. The

grand double dahlias have been out of fashion, owing to a series of cold summers; but in the year 1881, when it was thought the single dahlias were alone worthy of attention, the grand old double flowers came forth in such splendour that at one of the exhibitions where myriads of the single flowers were on view, very few persons saw them because of the superior attractions of the older and nobler varieties that had acquired historic renown as the most resplendent of all the autumnal flowers.

It must be confessed that the *ranunculus* is at the present time not a fashionable flower, for in truth it is comparatively unknown in its proper character to the race of modern florists. But its day may come again, and when it is once more seen in a state of high development as a familiar garden flower, people will ask how it could happen that such a "gem of purest ray serene" could lose its hold upon popular affection through a whole series of years. And the question is worth asking now, for there is no flower known to cultivators that so completely satisfies the requirements of the floral canons as the *ranunculus*. The dahlia may rank next to it in respect of technical merit, but the refinement of the *ranunculus* is unique, and its range of variety almost boundless; and it needs no costly appliances for its most perfect cultivation.

This flower was cultivated in the East for centuries before it became known in Northern Europe. The Dutch first became possessed of it; from them, in the time of Queen Elizabeth, our florists obtained it; and thus it was known just in time to have a proper place in the works of Turner and Gerarde and Parkinson. The

British growers soon outsped the Dutchmen in the production of fine varieties, as they have done also in the case of the anemone, tulip, and other famous flowers for which they have been indebted to Holland in the first instance. Fifty years ago there were in cultivation fully a thousand named varieties; indeed, Maddock catalogued eight hundred. Twenty years ago the fullest catalogue current contained only three hundred, and at the present time when we meet with a trade list it comprises a few dozen only, or perhaps less than a score.

But as there are as good fish in the sea as ever came out of it, so the amateur who will labour earnestly in raising seedling ranunculuses may soon become possessed of a race of first-class flowers, answering in "properties" to the severest requirements of the florists. The seed should be sown in January, in boxes of sweet loamy soil without manure, and the boxes should be kept in a frame or a cool greenhouse. The plants should appear in about six weeks. They require only ordinary attention as regards watering and so forth, but they will not endure neglect, and it is of great importance to let them have plenty of air and light from the first, to insure perfect hardiness. When the leaves die down in July, the bulbs are to be sifted out and stored away in dry sand.

The roots (or tubers), whether purchased or raised from seed, should be planted out in November in gardens that are well drained and remote from towns; but where the soil is damp or there is much coal-smoke, it is best not to plant them out until February, so that there shall be no growth above ground until the spring is somewhat advanced. A deep loam suits the flower better than any other soil, and the roots should be planted only two

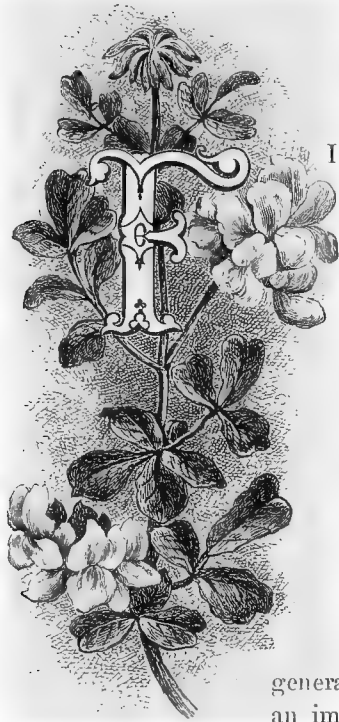
inches deep; and as regards distance it is a good rule to put them five inches apart each way, and of course alternating throughout the bed. For display irrespective of high quality, the cheap turban ranunculuses are invaluable, and as hardy as any choice flowers known to our gardens.

It is a matter of considerable importance that the Asiatic ranunculus, in all its many varieties, comes so nearly true from seed that to reproduce the finest sorts quickly and in quantity is altogether an easy matter. It must always be borne in mind, however, that the plant is somewhat peculiar in constitution. It needs a deep strong soil, and the bed should be mulched in spring with fat manure. Drought is death to it, and therefore during dry hot weather the water-pot must be used freely. And, finally, the roots require a season of decided rest. Both the seed and the roots possess an enduring vitality, and may be kept two years without detriment. But we do not advise putting any plant to such a strain; it is sufficient to know what is possible in the case of an emergency.





CORONILLA.



THE CORONILLA.

Coronilla glauca.

FIRST-CLASS window flowers are not so easily found as may be supposed by those who have never had to look for them; but this coronilla is the very type of what a window-plant should be, not only in appearance, but in habit. It is ever-green, and almost always growing. It flowers twice in the year when thoroughly well managed. It may become a "patrician tree" or a "family heirloom." In other words, the same plant may be preserved for any number of years, and be handed down from generation to generation; and that is an important point in the character of a genuine window-plant.

The treatment of this useful plant is precisely the same as the so-called "genista," or "broom," that the gardeners know as *Cytisus racemosus*; but the coronilla is a trifle hardier, and will bear rough usage patiently; and it may be fairly said that whoever fails to keep it for

some years, and to have at least one display of its flowers annually, either has very much to learn in the way of plant-growing, or is wanting in genuine love for plants. There are many who say they "love flowers;" there are comparatively few who know what the expression should imply.

The glaucous coronilla, like the golden greenhouse broom, is a free-growing shrub that attains to considerable dimensions if encouraged to grow and kept from harm in the winter. Severe frost will certainly kill it, but a light frost will do it no harm; and it may be exposed to the weather with advantage certainly during about eight months of the year. To obtain young plants, cuttings may be struck at almost any time, but with the greatest certainty in the summer. Young shoots should be selected, as the hard wood does not serve the purpose. If dibbled into sandy soil and pressed firm, and covered with a bell-glass, they soon form roots, and may then be potted into small pots in any light loamy soil. When the small pots are filled with roots, the plants should be shifted into pots one size larger, and in these they should remain for the winter, and the proper place for them then is a light airy greenhouse.

These shrubs are very accommodating. They will thrive in peat or loam, but the soil should be substantial, and there should be about a sixth part of sand added, and there may be added also about a fourth or fifth part of rotten hotbed manure.

To make handsome specimens, they should be carefully pruned as soon as the flowering is over. This is intended to keep them in shape, and to prevent them becoming unreasonably large. But they will do as well without

pruning as with it, and if the shape and size are satisfactory, and some increase of size may be allowed, it is simply waste of time and waste of growth to prune them. Why, except for some sufficient reason, destroy one scrap of any plant that nature has laboured through a whole year—perhaps through many years—to produce for you? However, having pruned them, turn them out of the pots, remove some of the old soil, and re-pot in clean pots of the same size, and do not disturb them again until they are growing freely. Then shift them into pots one size larger. Thus, before the growing season is over you will have promoted a free growth, and if this is well ripened by sunshine and fresh air, and a slight diminution of the water supply, a grand display of flowers will be seen in due time.

It was our good fortune to have for many years some fine plants of coronilla and cytisus. They had the most simple treatment; they were always in perfect health, and they flowered superbly. When they grew somewhat too freely, we kept them two years in the same pots, without any fresh soil. But the routine treatment consisted in turning them out of their pots in the month of April, and removing some of the old soil, and putting them back into the same pots, or into pots one size larger, and filling in with a mixture of equal parts of loam, leaf-mould, and rotten hotbed manure. They were in the open air, on beds of coal-ashes, all the summer, and they usually flowered in spring and in autumn, the spring bloom being the most abundant.

A coronilla is of necessity a garland flower or a flower dedicated to the glory of the rustic hero, with which he shall be crowned as with a crown of gold. In the com-

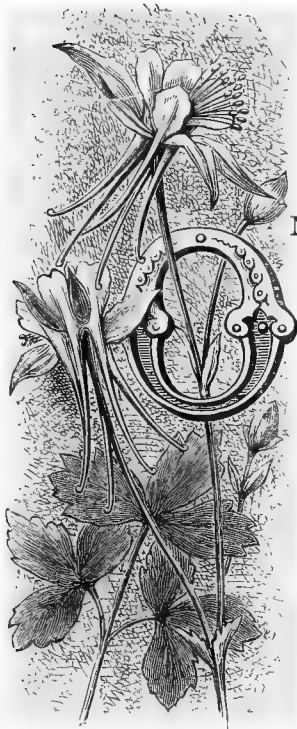
fortable country towns where window flowers are much better managed than in any of our great cities, the glaucous coronilla is called the seven-leaved crown ; and there is a companion plant, equally prized with it, the *C. valentina*, which is called the nine-leaved crown. A somewhat common garden shrub in France, but not often seen in this country, is the scorpion senna (*C. emerus*), which flowers in April. This has been employed to furnish a dye that was at one time valued as a substitute for indigo. But vegetable dyes are at a discount, and even indigo may be superseded by coal-tar.

The coronilla may have enjoyed fame as a garland flower, but its name represents the likeness to a garland or crown that is seen in the disposition of its flowers.





YELLOW COLUMBINE.



YELLOW COLUMBINE.

Aquilegia leptoceras.

NCE more we meet with flowers closely allied in one genus, but comprising all the primary colours as well as their secondary and tertiary shades. We have columbines red, blue, and yellow, as we have tropæolums, leschenaultias, and primulas. The beautiful *Aquilegia leptoceras*, also known as *Aquilegia chrysantha*, is a native of New Mexico and Arizona. Professor Gray is not in accord with Sir J. D. Hooker as regards the technical botany of the plant. The former regards *A. chrysantha* as a species, the latter regards it as a variety of *A. leptoceras*. The last-named is commonly met with blue and white, but Nuttall, its discoverer, calls it ochroleucous. It is figured in the "Botanical Magazine," *t.* 4407, and the plant before us is figured as *A. L. chrysantha* in the same work, *t.* 6073. A comparison of the figures justifies the view of Sir J. D. Hooker, the main difference between the two being that our present

plant has longer spurs and a deeper yellow colour than the older *A. leptoceras*.

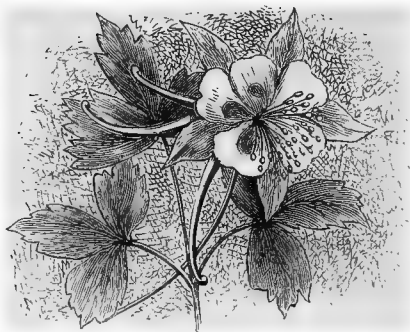
From this lovely yellow columbine that expert florist, Mr. Douglas, has obtained a series of hybrids of many shades of colour, and for the most part characterised by long spurs, all of them extremely beautiful. He appears to have crossed them in all possible ways with other species, and some of the hybrids have characters that might be deemed specific. They are all hardy, and they may all be raised from seed; and they are as worthy of specimen cultivation for exhibition purposes as any of the hardy plants in our gardens. Moreover, they are sweet-scented, which adds to their value considerably.

To raise any of the columbines from seed is a very easy task. The seed should be sown in pans or boxes, filled with light rich soil, in the months of April, May, or June. The proper place for the pans or boxes is a cold frame, where they should be kept moist and dark until the plants appear, from which time they should have air and light abundantly. When one or two inches high they should be pricked out into other boxes, to give them more room. A bed in a frame, or even a prepared place on an open border, may be more convenient for the purpose; and in any case they must be kept hardy by exposure, although it will be prudent to watch them, that they may not suffer from drought, and not less important, to save them from being devoured by slugs, which appear to be always ready at hand to sweep off all sorts of plants newly put out from frames. When quite strong in these quarters, say from the middle of August to the middle of September, they should all be planted out where they are required to flower the next year. If managed with reasonable care, they will

endure unhurt any amount of winter frost, and will flower gaily when the proper time arrives. In the dreadful winter of 1880-81 we had many plants of *A. chrysantha* in an open border, but the frost that killed the golden euonymus and the bay laurel did not harm these yellow columbines.

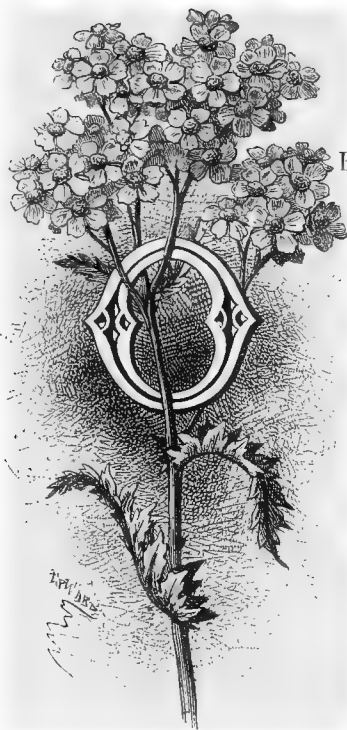
To obtain stock by division of the plants is a somewhat delicate process, and should not be resorted to so long as there is a prospect of obtaining seed. The best time to divide the plants is when they first show signs of new growth in spring. They must then be taken up, and carefully cut through, a certain number of uninjured roots being secured with each portion. These pieces should be potted in the smallest pots that will hold them, and the soil employed should be a mixture of peat and sharp sand, in about equal proportions, well mixed together, or a good loam, with sand added in the proportion of one-half, or even two-thirds. If carefully potted and kept for a few weeks in a frame, every scrap will make a plant. When the pots are filled with roots, the plants may be turned out into the border where they are to remain, or they may be shifted into larger pots, and have a further nursing. In any case they must have abundance of air and light to make them stout and strong. When old stocks are cut up in this way, it is good policy to nip out the subsequent flower-spikes as soon as they appear, for it is too hard upon a poor plant to be chopped up and to be expected to flower in the same season. If it is not convenient to divide in spring, it may be done in August, in which case the stock should be wintered under glass. The following are the best amongst many species of *Aquilegias*—*A. leptoceras*, pale blue, grey, primrose, orange, and yellow; *A. alpina*, blue; *A. cærulea*, delicate

blue and white, exquisitely beautiful; *A. canadense*, scarlet and yellow; *A. fragrans*, rosy flesh or light purple, sweet-scented; *A. glandulosa*, rich blue, a grand plant; *A. Skinneri*, red-tipped yellow, worth having, but scarcely desirable in a small collection; *A. Californica*, orange scarlet, a fine plant; *A. brachyceras*, full azure blue, with yellow crescents in the centre, curious and beautiful; *A. vulgaris*, variously coloured and well known, both with single and double flowers, as a most familiar garden plant. It is figured in the First Series, p. 93.





TANSY.



THE TANSY.

Tanacetum vulgare.

BEFORE etymologies, as we observed while discussing the origin of the name "snowdrop," are, indeed, sometimes right, but they are wrong often enough to prove the folly of any general declaration. How very Teutonic does the word "tansy" appear to the casual eye, and how very far from the tongue of the Teuton is its beginning in the verbal world! Although a bitter plant, it bears no relation by name to the process of tanning, but represents in reality the Athanasia of Olympus. Thus we must make a lofty flight to settle the etymology of this cottage garden herb, that to-day gives flavour (and a very unpleasant flavour) to a pudding, and to-morrow is employed to make a nauseous draught which ranks in fame with salts and senna as an agony incidental to the spring-time of our

mortal life, when bitters are bitter indeed. It is a fact, for which there is abundant book evidence, that tansy was sold as *athanasia*, and it acquired that name from the supposition that a plant was employed by the gods to render favoured mortals immortal, and fit society for the celestial highnesses by whom human destinies were governed. King Jupiter said to Mercury, "Take away this Ganymede; give him a draught of *athanasia* to render him immortal, and bring him back to serve here as cup-bearer." You will find the story in Lucian. It is only necessary to knock out the first letter, and the name is seen to be fully prepared for degradation; in fact, that small change starts it on the journey down the steep sides of Olympus into the smoky valleys where mortal men are to be found. The botanical name *Tanacetum* is quite modern, and gives one the idea of a great mass of tansy. Thus with the name of the plant we are quite out of the region of common sense.

For garden use, tansy ranks with golden rod and other such second-rate plants. Nevertheless a mass of tansy in flower is a fine sight in its way even in a garden; but when met with by the seaside, or in some half-wild waste where it has been long undisturbed, it may be described as noble, for the foliage is peculiarly rich, while the golden buttons glitter gloriously in the sunshine. As a garden plant, however, the tansy rises high above the commonplace, for it has enjoyed a degree of fame in connection with the so-called "leaf bedding" that has been in fashion of late years, since its delicious tone of green gives relief to the purple, bronze, and golden leafage of other and less hardy plants that are in request for planting in masses. The common tansy answers for this purpose fairly well; but a variety

known as *crispum* is far better. This variety is of dwarf, compact growth, and the colour of the leaves is brilliant emerald green; they are most elegantly cut, and delicately crisped and frizzled. To insure full appreciation of the beauty of this variety we should have to represent it as rare and costly; in which case, were the declaration accepted as true, the plant would be regarded as wonderful and unique. But it is a hard task to work up a rapture about the qualities of anything that is "common," and so we shall close this paragraph by saying that the variety *crispum* should not be allowed to flower, and that each plant should be somewhat isolated, so as to display its beauties advantageously, for when overcrowded these do not properly appear.

Tansy puddings, tansy cakes, and tansy omelettes are, perhaps, out of fashion. But they were certainly relished in days gone by, for Gerarde speaks of them as "pleasant in taste," and he recommends tansy sweetmeats as "an especial thing against the gout, if every day for a certain space a reasonable quantitie thereof be eaten fasting."

One of the most curious uses of the plant in olden times, perhaps, was that of rubbing it on joints of meat to prevent the attacks of flies; but how the flavour that was thereby imparted to the meat was got rid of we do not know. Perhaps, as the plant was commonly used in cookery, a tansy-flavoured joint of meat was always welcome, as in some parts of Europe it is customary to insert a clove of garlic in the top end of a leg of mutton, that in the process of cooking the entire joint may acquire the flavour of the vegetable that it is almost a sin to think of in polite society.

Here is a picture of an old-fashioned garden with the tansy in full glory in the midst thereof:—

“And where the marjoram once, and sage, and rue,
And balm, and mint, with curl’d-leaf parsley grew,
And double marigolds, and silver thyme,
And pumpkins ’neath the window climb ;
And where I often, when a child, for hours
Tried through the pales to get the tempting flowers,
As lady’s laces, everlasting peas,
True-love-lies-bleeding, with the hearts-at-ease,
And golden rods, and tansy running high,
That o’er the pale-tops smiled on passers-by.”





STAR OF BETHLEHEM.

STAR OF BETHLEHEM.

Ornithogalum umbellatum.



WHEN the great poet asked, "What's in a name?" he was speaking for Juliet. Had he spoken for himself, we might deem him at the time of highest inspiration less prophetic than was his wont. In truth there is much in a name, even in the name of "rose," that illustrates the argument; but much more, perhaps, in the name now before us. When the modest star of Bethlehem first acquired its pretty name there is none to tell, but it is an

old name, and the dearer perhaps for its antiquity. In Lyte's "Dodoens" (1578) it is described as the "white fælde onyon," but with no allusion to the sacred story. The author records finding it in plenty in the neighbourhood of Malines, where we have ourselves gathered the flowers on the roadside, as we have in many other places in the Low

Countries, and particularly on the skirts of field-paths near Haarlem. But Dodoens comes near to the adoption of the familiar name when he describes the goat's-beard, or scorzonera (also-called viper's grass), as "starre of Hierusalem" and "Joseph's floure." In Turner's "Herbal" we fail to find any mention of the plant, and to search in Clusius or Fuchsias would probably be waste of time. But in Gerarde's "Herbal" six species of *ornithogalum* are set forth, as the "star of Hungary," "the lesser Spanish star," the "star of Bethlehem," "the great Arabicke star-floure," &c. Gerarde begins the story by saying, "there be sundry sorts of wilde field Onions, called 'Starres of Bethlehem,' differing in stature, taste, and smell, as shall be declared." Parkinson, both in the "Theater" and the "Paradisus" describes the plant correctly, though briefly, regarding it as scarcely worthy of notice, clearly showing that familiarity had bred a contempt to which he, as a master botanist, should have been superior, not in favour of this plant merely, but with respect to even the humblest weed.

It would thus appear that the familiar name of this plant is of comparatively modern origin. Its meaning must be obvious to all, for the flower may be likened to a star, more especially when the green stripes on the outside are conspicuous; and its association with Bethlehem as representing the star that guided the Magi to the manger in which Jesus was born is not so extravagant as at first may appear. This plant is the *ornithogalum*, the bird's milk-flower, and must have been compared with the milky secretion with which pigeons nourish their young, and thus it would be the dove's milk-flower. In common with many liliaceous plants, the roots are edible, and

were in ancient times eaten, both raw and cooked, as Dioscorides testifieth. A very trivial blunder in copying or translating might convert dove's milk into dove's dung, and certain it is that Linnæus and later writers have regarded this plant as the dove's dung, mentioned in the Second Book of Kings vi. 25: "And there was a great famine in Samaria: and, behold, they besieged it, until an ass's head was sold for fourscore pieces of silver, and the fourth part of a cab (about half a pint) of dove's dung for five pieces of silver." But we are not bound to suppose an error anywhere in the text, because Dr. Royle, and before him Bochart, declare that "pigeon's dung" is a name in common use amongst the Arabs for vegetable substances. In Smith's "Dictionary of the Bible" the Rev. William Drake says, "there seems good reason for taking this as a literal statement," but adds that "the Arabs call the herb Kali sparrow's dung." Mr. Grindon, in his admirable work on "Scripture Botany," regards the passage as referring to the chick-pea, which is the meanest kind of pulse.

Let us return to the more agreeable subject of the place the plant has acquired by its familiar name in the midst of previous associations. It is the star of Bethlehem that shines amid the green herbage of the spring, and pleasantly promises that the summer is coming, just as the other heavenly star gave promise that the Sun of Righteousness would arise with healing in His wings. How fitting a theme for such a poet as Henry Kirke White, whose sympathies were ever tenderest towards holy things!

The species of *ornithogalum* are far too numerous for any moderate amateur to be justified in inspecting them. The best of those that may with safety be planted out

in the shady border are *O. umbellatum*, *O. pyrenaicum*, *O. nutans*, and *O. pyramidalis*. The first will thrive under the deepest shade of trees, but the others like a little sunshine. The second in the list is the plant known as "Bath asparagus," the flower-stems being sometimes cooked and served as a table vegetable in the ancient and beautiful city of Bath.

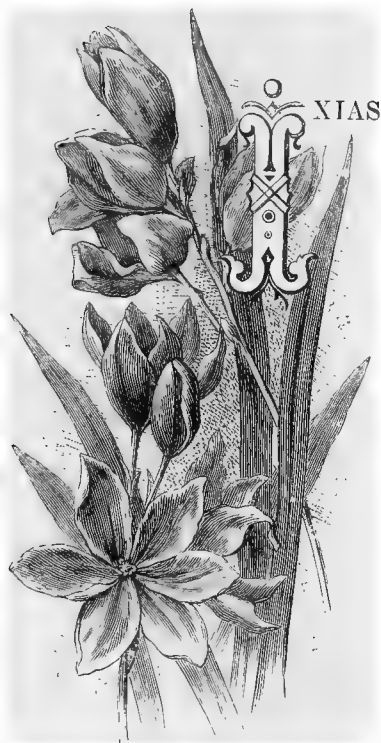




IXIA.

THE IXIA.

Ixia crateroides.



of Great Britain, but are hardy and prosperous in the Channel Islands, and more particularly in Guernsey. It follows, therefore, that they are better adapted for pot culture than for the open ground ; and the surest way to

enjoy them is to buy a new stock of bulbs, or, more properly speaking, "corms," every year, as by such means you insure a brilliant display at small cost of either money or labour. In Guernsey the sun-heat is sufficient to ripen the growth perfectly, and the bulb merchants obtain their annual supplies from thence, or from the south of France or Italy. It is the comparative coldness of the English summer that renders it difficult to flower the roots a second time; but this difficulty may be surmounted, and it is our business to show the way.

For a pretty display of *ixias* and *sparaxis* we provide, in the month of September, a nice mixture of sweet leaf-mould one part, fibrous peat three parts, and silver sand two parts. A good sandy peat, containing a reasonable amount of fibre, will suffice without any admixture, but it is not everywhere to be had ready-made from Mother Earth. For all general purposes, five-inch pots, three to five roots in a pot, will be the best rule as to sizes and numbers. But large pans, if somewhat shallow, are equally suitable. In any case, it is folly to spread the roots over a great space, and five in a five-inch pot will be none too many for a good head of bloom. Crock the pots with care, fill nearly full with the soil, and then place the bulbs, and cover them just enough to put them out of sight. The soil should be a little moist in the first instance, in which case there will be no necessity for giving water. But if the soil is dry, give them one dose of water, and pack them all away in a cold frame; draw the light over, and leave them to manage their own affairs for a little while.

If kept safe from frost, with no more moisture than just suffices to encourage root-action, they will in due time put up their green spears, and show that they will

endeavour to do their duty. Now it is of very great importance not to give them much water, but at the same time they must not be quite dry. When there are visible signs of growth, remove the plants to a warm greenhouse, and increase the supplies of water as the growth advances, taking care always to avoid excess, and at the same time keeping them near the glass, and giving them as much air as is usually allowed in winter to plants that are known to be nearly hardy. As spring arrives the flowers will be showing ; they will require more liberal supplies of water, more air, and perhaps a little staking and tying to keep them in order nicely. Your reward is at hand, and the beauty of the bloom will justify your endeavours. When the bloom is past, put the plants out of doors in a sunny situation on a bed of coal-ashes, and take care that you do not now neglect them.

The leaves will die down soon after the flowers are past, and then there must be an end of watering. If it be a very hot summer, the ixias may be left alone to go quite dry, and to roast into perfect ripeness, as in the hot sandy soil of their native fields is the proper course of events. But in a cool summer it will be good practice to take all the pots to a sunny greenhouse, and lay them on their sides, on any stage or shelf that can be spared, full in the sun. Being thus properly cooked, they will flower again, and you have but to shake them out about the middle or end of September, and re-pot them in fresh pots and fresh soil, to insure another bloom ; and so on from year to year, so long as you have patience to do justice to ixias.

Now for another system in which pots are not required. Make up a bed of sandy peat under a south or west wall, and preferably next the wall of a hothouse. The bed

must be in a frame with lights ; it must be well drained, and it must have a sunny exposure. Plant the roots in rows across, three inches apart in the rows, and the rows six inches asunder. This must be done in September or early in October. Give the least amount of water possible to be safe, but moisture the roots must have. Make use of the lights judiciously, giving air as often and as long as possible, and above all things taking care not to push the growth. You will in due time have a splendid bloom. And to speak the plain truth, to secure a good bloom is easy enough ; the grand thing for the cultivator is to bloom the same roots a second time, a third time, a fourth time, and so on, and with each year's growth to obtain a supply of offsets. To do this you must encourage your plants to flower freely and to complete their leaf-growth, and then you must let them go quite dry, and put on the lights to help on the roasting process.

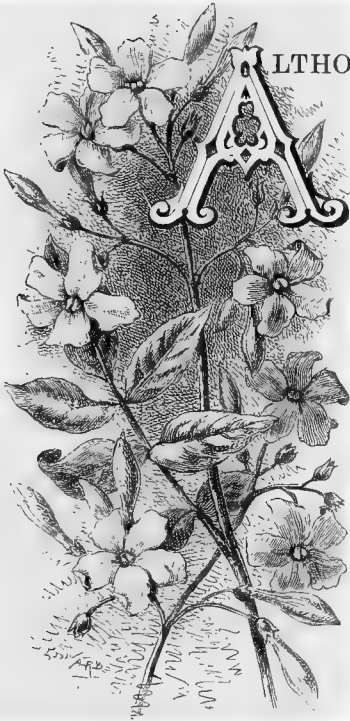




YELLOW JASMINE.

YELLOW JASMINE

Jasminum revolutum.



ALTHOUGH somewhat common, this is not an old plant, for it flowered for the first time in this country in the garden of the Right Hon. Charles Long, at Bromley, in Kent, in the year 1814. The flowers then produced served for the first figure of it published, forming No. 1,731 of the *Botanical Magazine*, issued in the year 1815. The tree is a native of Northern India, but in general characters comes near to the European *J. fruticans* and *J. humile*, which are useful border shrubs, producing yellow flowers.

In former notes on species of *Jasminum* we have spoken of the fragrant white jasmine, the favourite of the family, and the winter-flowering species from China that has of late years proved quite hardy near London,

though for some years it was grown in the greenhouse, as too tender for the open ground. This winter-flowering plant, *Jasminum nudiflorum*—so called because the flowers appear without any accompanying leaves—began to flower at Kew on the 1st of November, 1885, and continued flowering until the end of March, 1886. No one particular tree was in flower during the whole of these five months, but some trees flowered early, some at mid-winter, and some in the dawn of spring, the aspect and degree of shelter being the chief determining causes of the difference. The fact appears worthy of record, because frost and snow were not unknown in the winter when the facts were noted.

The yellow jasmine reminds us of the great wealth of our gardens in flowering trees and shrubs. When we say "our gardens," we are not unmindful of the poverty of many gardens, wherein the lilac and the laburnum divide between them all the honours that may be due to flowering trees. We have not a word of disparagement to say of either of these cheerful friends. They are hardy enough to manage their own affairs, and in return for the little space they occupy—occasioning absolutely no trouble at all—they make return in harvests of delightful flowers. But there are other good things at command for the lovers of gardens who will be liberal in planting. As companions to the jasmine we have several species of ornamental currants and gooseberries, such as *Ribes aureum*, with yellow flowers; *R. speciosum*, with crimson flowers, like miniature fuchsias; and *R. niveum*, with white flowers. At another turn we come upon the weigela or diervilla; and if only one of this fine group can be accommodated, it should be the old *Weigela rosea*, which makes a grand bouquet of rosy flowers, sweetly shaded with white and

crimson in the "merry month of May." It is not a violent transition to pass from this gay thing to the grander and more glorious *Pyrus japonica*—which it is the fashion now to class as a *Cydonia*—a tree that is worth having for its bright leafage, but is almost terrific in its splendour of crimson flowers when spring bursts upon us suddenly, and they all come out at once. But this good friend is everywhere so badly grown, being systematically crippled with the pruning-knife, that not many people know it in proper character. There is, however, one perfect specimen, in the garden of the Royal Horticultural Society at Chiswick. It is a mountain of green, lighted with a thousand crimson flames in the month of April; and one reason of its exceeding massiveness and splendour is that it is never pruned at all.

Mention of the laburnum should remind us that it belongs to the great family of papilionaceous plants, for in that family we find two magnificent garden trees, the rose acacia (*Robinia hispida*) and the Judas tree (*Cercis siliquastrum*). The first produces a profuse leafage, and large racemes of handsome purplish-rosy flowers. The second has peculiar roundish leaves, and in early summer it is quite richly dotted with small flowers of an intensely rich crimson or carmine-tinted rose colour. These flowers appear on the young wood and the old wood alike; and sometimes we see them on the rough stem of the tree, as though fixed there by some eccentric genius to deceive us. But it is Nature's doing; the eccentricities of man are as nothing to her infinite resources when in a whimsical humour.

Of syringas and spiræas we have discoursed; but the flowering shrubs and trees are so many that one does not

soon reach the end of them. We have, for example, a group of brambles of the most delightful character, if regarded only as ornamental plants. The trailing *Rubus arcticus* is a gem for the rockery; the upright-growing *Rubus odoratus* is a stout bush, producing large flowers, like single purple roses; the daisy-flowered bramble, *Rubus bellidiflorus*, covers itself in high summer with myriads of rosy daisies, for its flowers are just of the pattern of double daisies of the most delicate character. And again, there is a grand but somewhat quaint bramble, with stems perfectly white, as though it had with its terrible thorns lacerated a princess of fairyland, and had been whitewashed by the lawyers of the same province to redeem it from disgrace. It is appropriately named *Rubus leucodermis*.





CORNFLOWER.



CORN FLOWER.

Centaurea cyanus.

THE two names by which this plant is known to the happy peasant, corn-flower and blue-bottle, demand no explanatory disquisition. Before the flower expands, the ovoid involucre bears a very fair resemblance to a bottle, but the completion of the growth makes a great change in the general configuration, the resplendent blue florets forming a series of stars, so that the bottle is now hidden by its adornments. As a garden plant it varies much in colour, and a pale variety has been selected for the present figure.

This occasional occupant of the corn-fields is regarded by the botanists as of South European or West Asiatic origin, having been spread abroad from its original habitat by commerce. It has had the good fortune, owing doubtless to its conspicuous beauty, to be recognised by all who have written about plants. In Hippocrates it figures as an

astringent herb, which may be infused in wine as a corroborant. In Turner's Herbal (1568) it is thus introduced to us :—"Blewbottel, otherwise caled Blewblawe, is named in Greek, Kyanos; in Latin, Cyanus, or Ceruleus; in Duche, Blaw Cornblumen; in Frenche, au foin, or blaueole, or bleuët. Some herbaries call it baptisecula, or blaptisecula, because it hurteth sicles, which were ones called of olde writers seculae." After a few words of description Turner gives us two touches of romance, thus :—"About midsummer the chylder use to make garlandes of the floure. It groweth much amongst rye, wherefore I thinke that goode rye in an euell and vnseasonable yere doth go out of kinde into this wede." But it was quite a common belief of the time that a plant might, in growing, change its nature without the aid of the ages and the slow-working influences required by the modern doctrine of evolution. The staying of the sickle by the corn-flower is noticed by many of the old writers. Gerarde calls it "hurt sickle," and saith "it hindereth and annoieth the reapers by dulling and turning the edges of their sickles in reaping of corne."

Whether the old generic and specific name *Cyanus* be commemorative of a beautiful youth, or whether it refers directly to the blue colour of this flower, we would not venture to declare. Cyanus is the name of this flower, and cyaneus colour is necessarily a blue colour. The juice of this flower, treated with alum, yields a beautiful blue dye, which, however, is now scarcely known in the arts, because long since superseded. Thus, our plant is excluded from the utilities, unless we reckon as one of them what is said by Turner, that "about midsummer the chylder use to make garlandes of the floure." However, there is a large con-

stituency to vindicate the flower on the ground of the most commonplace usefulness, for it supplies breakfast, dinner, and tea to any number of bees and butterflies, which literally rush upon it, so that to the butterfly collector it often proves a profitable decoy. The Painted Lady, amongst many others, has a particular liking for the hypothetical beautiful youth.

Amongst the hardy annuals that will bloom abundantly in any kind of soil in a sunny garden there are four good blue-bottles—namely, *C. cyanus*, now before us, the height of the plant two to three feet, silvery in stem and leaf, the flowers varying in colour from white to dark purple; *C. crocodylum*, the crocodile flower, the plant averaging from one to two feet in height, the flowers being purple and white; *C. depressa*, which is never depressed in spirits, but only in stature, being but one foot high—a silvery plant, with flowers rather less showy than those of our great, true, weedy, and wonderful “corn-flower;” and *C. involucrata*, a very involved crater, the involucre curious in structure, the flowers yellow. The last-named is a somewhat ugly thing, that the florist may with propriety hand over to the botanists and the artists.

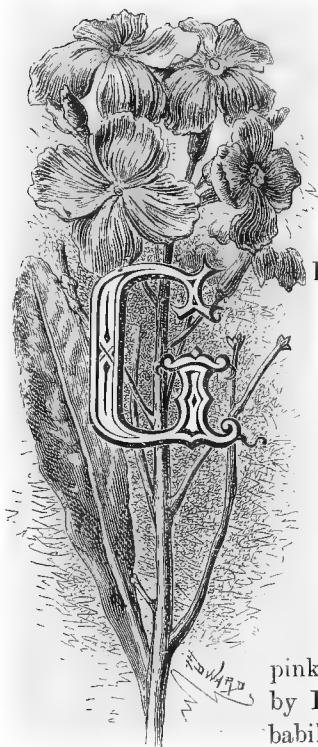
The perennial centaureas comprise a few fine plants, such as *C. Babylonica*, a gaunt grey weedy herb, like the tower of Babel, of noble stature, bearing unattractive yellow flowers; a truly fine plant for the shrubbery, and a proper companion to any of the mulleins; *C. dealbata*, a neat silvery-leaved plant, bearing red flowers that serve as sham rubies to set off the lustre of the “albata plate;” *C. montana*, a good border plant, producing flowers like those of *C. cyanus*, but larger, and with a wider range of colour in its variations.

The tender centaureas are valued for summer bedding on account of their pure silvery or bluish tinted white foliage. The best of them are—*C. ragusina*, *C. argentea*, and *C. gymnocarpa*. These are very easy of culture if kept somewhat dry during winter in an airy pit or greenhouse. They are multiplied by cuttings in the usual way of bedding plants, and require careful management to prevent losses through any excess of moisture.





SINGLE STOCK.



THE SINGLE STOCK.

Mathiola annua.

GILLYFLOWERS are of several kinds, and the stock is one of the number. A gillyflower may be a stock, or a wallflower, or a clove, or a carnation. The word is often regarded as a modification of July flower, or of the French *giroflée*; but it has deeper and older roots, being a corruption of the Indian *caryophyllon*,* the odour of which resembles that of the clove-pink. The illustrative passages cited by Dr. Richardson indicate the probability of its being a vagrant sort of word; for in Douglas's translation of Virgil it is spelt *jereflouris*; in Holland's "Plinie," *gillofre*; in Spenser's "Shepherd's Calender," *gilliflower*; and in Burrow, *gillyflower*. In Parkinson's "Paradisus" we find descriptions of "gillowflowers" of many kinds, the chief being carnations, dame's violets, and stocks. The second in this list is the purple rocket (*Hesperis*), which is closely allied to the stock. There is a fine subject

* Greek, *Καρπο φυλλον*.

for a learned discourse in the word gillyflower, but the pith of it is now before you; all that really remains is amplification. And amid a thousand passages that might be quoted by one who should have no better employ than to hunt for them, the mention of the flower by Shakespeare in the "Winter's Tale" would scarcely be equalled for interest:—

"*Perdita*. Sir, the year growing ancient,—
Not yet on summer's death, nor on the birth
Of trembling winter,—the fairest flowers o' the season
Are our carnations, and streak'd gillyflowers,
Which some call nature's bastards: of that kind
Our rustic garden 's barren; and I care not
To get slips of them.

"*Polixenes*. Wherefore, gentle maiden,
Do you neglect them?

"*Per*. For I have heard it said,
There is an art, which, in their piedness, shares
With great creating nature.

"*Pol*. Say, there be;
Yet nature is made better by no mean,
But nature makes that mean: so, over that art,
Which, you say, adds to nature, is an art
That nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock;
And make conceive a bark of baser kind
By bud of nobler race: this is an art
Which does mend nature,—change it rather; but
The art itself is nature.

"*Per*. So it is.

"*Pol*. Then make your garden rich in gillyflowers,
And do not call them bastards.

"*Per*. I'll not put
The dibble in earth to set one slip of them:
No more than, were I painted, I would wish
This youth should say, 'twere well."

In the old copies it is spelt *gillyvors*, which is, no doubt, a mere contraction of gillyflowers; and it is equally beyond

a doubt that the gillyflowers Perdita cared not for were the streaked stocks figured by Parkinson at 259 of the "Paradisus," and labelled "Single stript Stock Gilloflowers."

The curious reader may be disposed to inquire why these flowers were called *stock-gillyflowers*? for from that old compound we derive the modern designation "stock." The reply is of interest, as tending the more certainly to define the range of the term "gillyflower," and so make an end of controversy. They were called stock-gillyflowers to distinguish them from others that were not stocky; for the stock has a distinct stem, and is tree-like in growth, some of the kinds forming bushes two to three feet high, whereas the "clove gillyflowers" are grass-like rather than tree-like in their growth, and these last were the gillyflowers, or gillyvors, *par excellence*.

Single stocks are not thought much of by the florists, but when seen in large clumps they are as cheerful as any flowers in the garden, and their spicy odour is very refreshing. The annual or ten-week stocks should be treated as half-hardy to insure a good bloom, and the following is as good a code of cultivation as we can devise for them.

Sow the seed in pans filled with light rich soil in March and April. Keep the pans under glass until the plants are stout and strong, and then plant them out in a frame. If you cannot do this, wait until the weather becomes warm and settled, and put the pans out of doors, giving them a little protection for the first two or three nights. If the seedlings are put into the frame you will be able to transplant them to the beds with nice tufts of roots; if you cannot bring them on in this careful way, you must transplant into the beds from the seed-pans, but for this you must wait for summery weather.

Annual stocks will flower fairly well in any garden soil, but if a rich and long-lasting bloom is desired a bed of rich soil should be prepared, for of all the flowers in the garden, stocks require and deserve good cultivation, which includes providing them with a rich soil and giving them plenty of water during dry, hot weather.

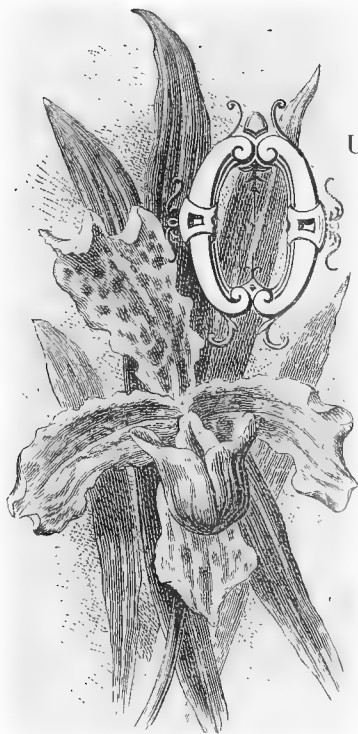
For early flowering in pots the seed should be sown in August, and as soon as the plants are large enough to handle they should be planted out on a bed of light but good soil in a brick-pit, or be pricked out into pans and wintered in the greenhouse. Soon after the turn of the year they should be potted singly in five-inch pots in rich soil, and have a warm berth to bring them on for flowering. A more simple and by no means despicable procedure would be to pot them from the seed-pans in autumn, putting three plants in a five-inch pot.

The *East Lothian Stock* is a great favourite in Scotland. The seed is sown on a mild hotbed in February, and the plants are nursed with care, and put out in rich beds in the month of May.





LADY'S SLIPPER.



LADY'S SLIPPER.

Cypripedium longifolium.

OUR lady's slipper is the hardy *Cypripedium calceolus*, which is dedicated to St. Etheldreda. Strictly speaking there is no other lady's or "ladies'" slipper, and the familiar generic name of this group of orchids is therefore, in a certain sense, apocryphal. But the world has its own way in disposing of such matters, and we do not intend to darken these pages with any dry discussion.

The *cypripediums* are the most attractive of all the orchids for the earnest student of plant form, because they

illustrate in the most patent manner the true theory of the construction of an orchid. On this point a few remarks may be at once useful and interesting. An orchid flower consists of fifteen parts, in five series of three each. To find these will rarely be an easy task, for all kinds of

variations are played by Nature on the ever-ruling simple tune. But in the study of an orchid, the five series of three each must be sought, and if not found, must be in some way accounted for. Here is the true architectural theory—three sepals, three petals, three stamens, three pistils, and three carpels. In the orchid before us the topmost piece, or banner, is a sepal; and the question arises, Where are the other two? They are united, and partly hidden behind the pouch, or labellum: that is to say, as one sepal forms a banner above, the other two conjoined form an apron beneath the centre piece, or slipper. The two side pieces are petals, and the slipper, or pouch, or labellum, is also a petal. Amongst all the orchids, the cypripediums stand alone in respect of their production of three stamens; but here is another difficulty, for the casual eye can find but two, which are placed right and left of the column. Where is the third? It is sterile, and placed between the other two. The three stigmas are confluent, and appear as one below the anther, being called *the* stigma in descriptions, because of its evident existence. As for the three carpels of which the ovary consists, these will appear only as the result of fertilisation, and at a later stage in the history of the flower.

The singular structure of the orchids inspired the elder Darwin with a song, and the younger Darwin—Charles—with a passion for a special study, the outcome of which was a remarkable book on orchids generally. As regards the uses of the slipper, Mr. Darwin's work is rich in proposals for the careful observer. He says: "Cypripediums differ from all other orchids. An enormous amount of extinction must have swept away a multitude of intermediate forms, and left this single genus, now widely dis-

seminated, as a record of a former and more simple state of the great orchidean order." Having described the flower, he says: "As the two anthers stand behind and above the lower convex surface of the stigma, it is impossible that the glutinous pollen can get to this, the fertile surface, without mechanical aid. An insect could reach the extremity of the labellum, or the toe of the slipper, through the longitudinal dorsal slit; but, according to all analogy, the basal portion in front of the stigma would be the most attractive part. Now, as the flower is closed at one end, owing to the toe of the slipper being upturned, and as the dorsal surface of the stigma, together with the large shield-like rudimentary anther, almost close the basal part of the medial slit, two convenient passages alone are left for an insect to reach with its proboscis the lower part of the labellum—namely, directly over and close outside the two lateral anthers. If an insect were thus to act—and it could hardly act in any other way—it would infallibly get its proboscis smeared with the glutinous pollen, as I found occur with a bristle thus inserted. . . . Thus an insect would place either the flower's own pollen on to the stigma, or, flying away, would carry the pollen to another flower. . . . We thus see how important, or rather how necessary, for the fertilisation of the plant is the curious slipper-like shape of the labellum in leading insects to insert their probosces by the lateral passages close to the anthers." The cypripediums alone possess glutinous pollen grains, and with them the peculiar mechanical construction requisite to the accomplishment of fertilisation.

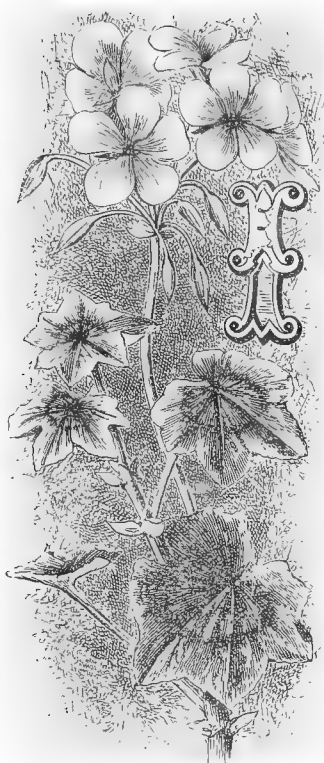
The cultivation of the tender species of cypripedium is a simple matter where plant growing is fairly well under-

stood. They are terrestrial orchids, requiring a compost of peat, loam, and silver sand, with plenty of water when growing freely. The most generally useful is our old friend *C. insigne*, which requires a warm greenhouse, and careful management as regards air-giving and shading. The species that require the stove are usually potted in a mixture of sphagnum moss and peat, with a considerable admixture of small crocks. As for the hardy kinds, a shaded and very moist peat bed may be recommended, and if small grasses and other very neat weeds are allowed to grow up with them, there will be no harm done; but coarse weeds must not be allowed. The loveliest of all the hardy orchids is *Cypripedium spectabile*, the rosy pouch of which is matchless in its colour.





IVY GERANIUM.



THE IVY GERANIUM.

Pelargonium lateripes.

VY-LEAVED geraniums have obtained less than their fair share of attention, and the consequence is their merits as decorative plants are but little known. As they have been in cultivation about a hundred years, it is time they were appreciated by the public at large, for although not the most showy, they are beyond doubt the most beautiful of all the pelargonium or geranium family. The raisers of new varieties and those who cultivate specimens for exhibition have not been wanting in attentions to this class, for

they have been greatly improved, and the double-flowering varieties raised by M. Lemoine, of Nancy, approach the wonderful in their exceeding loveliness.

In the open garden the ivy-leaved geraniums are useful to adorn vases and baskets, and they are available also as

bedding plants. They display their fine qualities best, however, when well grown in the form of pyramids for the conservatory, and a set of the newest varieties so treated would create a sensation anywhere, save in the inner circle of horticulturists, who are familiar with their splendid capabilities. To grow fine specimens is an easy task, but demands continuous attention, for we must have a free growth without coarseness, and an abundant display of flowers.

The cuttings having been struck in the usual way, should be potted into three-inch pots in a rather light compost, consisting of equal parts of loam, leaf-mould, and sharp sand. A fairly warm house will be the best place for them at all times except in summer, when they should remain under glass, and have free ventilation. When the pots are filled with the roots, the plants must be moved into the next size of pots, and care must be taken never to repot them until they have filled their pots with roots, and to give them no more pot-room than they can occupy in a reasonable space of time. None but an expert, who needs not our counsel, should shift one of these plants from a small pot to a large one, for long ere the large pot is filled with new roots the soil will become sour, and the plant will cease growing. The rule applies generally to plants, but is of special importance in the case of ivy-leaved geraniums.

By successive shifts the plants will reach to eight or nine-inch pots, and beyond that size it is not advisable to go. When removed from the three-inch to five-inch pots the compost should be somewhat more substantial than was used in the first instance, say mellow loam from rotted turf, well-rotted old hotbed manure, and either peat or leaf-mould equal parts, with the addition of sand sufficient to

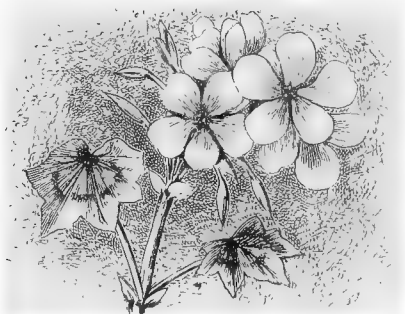
render the whole porous. Should this prove too strong, the proportion of manure must be reduced at the next shift, but a certain degree of vigour is needed to bring out the beauty of the plants. When they have reached specimen size, and have flowered, they should be shaken out of the old soil and have a moderate pruning, and be potted back into smallish pots to go through the same course of culture as before. Our practice, indeed, is to plant out those that have run their course, or to throw them away, trusting to young plants for specimens.

As regards the training, care must be taken to allow the growth some degree of freedom, for the severe hard lines that are produced by tying in closely make a mere burlesque of these elegant plants. In the early stages one or two light stakes will suffice; but as the growth progresses it will be well to insert three or four, or even more, and draw them together at the top to form a kind of cone. By training the leading shoots to these stakes and leaving the side shoots in some degree free, a neat contour without any hardness will be secured. In the event of the plants becoming thin at the bottom, it will be advisable to cut them back, and as soon as they begin to grow again freely to give them a shift to the next size. If crowded up with other plants they are certain to be thin at the base; they should therefore stand apart, so that the light plays equally upon them from head to foot. As a rule they require all the light they can get, but at times when the sun is high and the heat considerable, a little shade will be useful, and the path and the stage of the house should be sprinkled with water.

The following are grand varieties of ivy geraniums, and they are well adapted for first-class specimen culture :—

Albert Crousse, Comte Horace de Choiseuil, Madame J. Menoreau, Candeur Sarah Bernhardt, Beauté de Lyon, La France, Gloire d'Orléans, Marguerite Jacquot.

Ivy-leaved geraniums are occasionally employed with excellent effect as bedding plants, those with variegated leaves being most in favour. The best of the series for edging a bed is the Duke of Edinburgh, which has whiter leaves than any other kind, but grows freely and has a very bright appearance. Another good variety is L'Élégante, the leaves margined white and the flowers white. This is a lovely basket plant, and looks well on a tree-stump or hanging over a ledge of rock. A golden-leaved variety named *Aurea marginatum* will be useful where a yellow-toned edging is required. Each of these three when planted as edgings to beds will look better without than with their flowers; but when grown as basket plants the flowers add to their effectiveness.

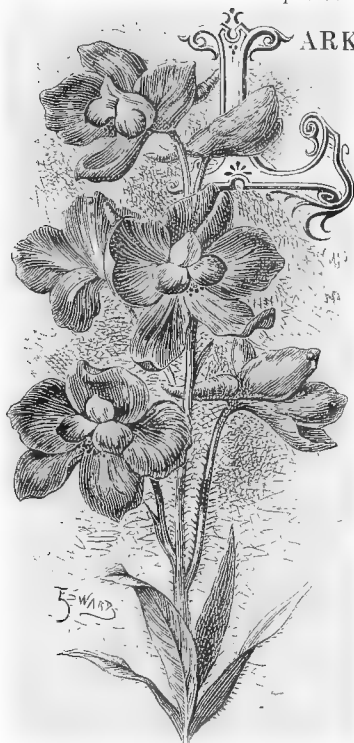




LARKSPUR.

LARKSPUR.

Delphinium formosum.



ARKSPURS may be divided into two classes, the annual and the perennial. The figure represents the finest garden plant of the family, and one of the most generally useful and accommodating of all known hardy perennials. The annual larkspurs are the cross-bred descendants of *Delphinium ajacis* and *D. consolida*, and they comprise a series of very distinct forms severally known as dwarf, rocket, branching, candelabrum, hyacinth-flowered, stock-flowered, and ranunculus-flowered. These are all worth

cultivating, but for general purposes the best are the branching, the hyacinth-flowered, and the rocket, which may be had in all colours except shades of yellow, of which the genus

Delphinium gives no examples, unless we recognise *D. ochroleucum* as a yellow, which, properly speaking, it is not. The annual larkspurs are amongst the gayest flowers of their class, and the bright blue varieties are brilliantly beautiful. They are unfortunately of brief duration when sown in spring, and spring sowing of annual flowers prevails so generally that not many growers of such have seen the best sorts in the best condition. The larkspurs make finer spikes of flowers and last much longer when the seed is sown in autumn, and this practice provides the garden with their agreeable verdure through the winter, for the plants are quite hardy, and fine clumps often appear from self-sown seeds. The parent species are limestone plants, and the garden varieties thrive on dry calcareous soils.

Perennial larkspurs are raised from seeds and divisions; they are quite hardy, and will thrive in almost any soil or situation. In common with a majority of the plants that command attention in the garden, they make a finer growth in a good soil than in a bad one, but it is worthy of special note that a hot dry soil is well adapted for them, provided the aid of a little manure is afforded. When a collection has been secured, it will be good practice to lift, and if needful divide and re-plant every three years, the soil to be well dug over and liberally enriched with the clearings from an old hotbed. In any case of failure, winter damp may be suspected as the cause, for as limestone plants, a somewhat dry soil suits larkspurs far better than a heavy soil retentive of moisture.

The raising of plants from seed is a quite simple matter, but needs a little care, on account of the liability of the young plants to "damp off" if too freely or too frequently watered. The best time to sow the seed is in summer or

autumn, as soon as it is fully ripe, but spring sowing usually answers and is generally practised. Sowing on the open border is not good practice, but self-sown plants which appear on their own account may always be left to manage their own affairs until large enough to be worth transplanting. Sow in shallow pans or boxes, using for the purpose good sandy loam without any manure ; sow with care, to distribute the seed evenly and thinly, and cover with a mere dusting of soil. Keep the seed-pans in a frame, and lay slates or squares of glass, or even newspapers, over them to prevent evaporation, for it is always good practice to get up seeds by the aid of the original moisture of the soil, without giving any water until the young plants have made a fair start. As soon as the plants appear the coverings must be removed and the frame must be cautiously ventilated, so that by the aid of light and air, without exposure to a roasting sunshine or a frosty east wind, they may grow stout rather than tall, for seedlings that are "drawn" through being kept too close, and lacking light and air, will be weak in proportion to their slenderness, and a very slight accident, such as a little too much water when the weather is cold, may kill them outright. As hardy plants, larkspurs need no coddling, but protection and encouragement may be afforded without detriment to their natural vigour. The after-management consists in planting out in other pans or on an open border of kindly soil, to make free growth preparatory to planting them out. Where the soil is naturally dry and calcareous, autumn is a good time for transferring them to their permanent stations, but where the soil is heavy, it is advisable to defer the planting until spring, provided the nursery bed to which they have been transferred from the frame is well drained and in some degree sheltered.

Division of the roots is best accomplished in the spring, especially in places where winter damp is a known enemy to plants. None but an expert should cut the roots into small pieces, for the smaller they are the more careful nursing will they need in the way of shading and watering.

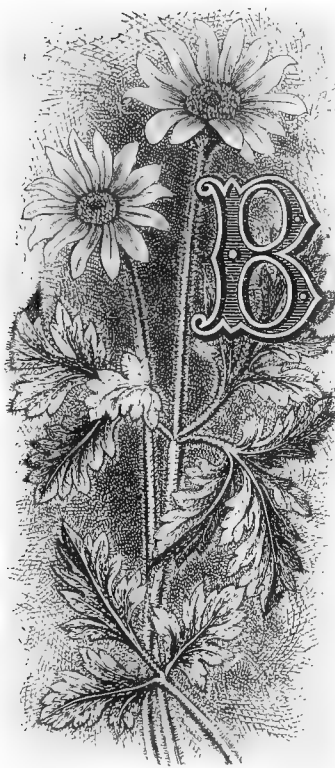
Delphinium formosum, the most generally useful of all this family, was largely employed a few years ago as a bedding plant associated with scarlet pelargoniums. The two kinds of plants being put out in alternate rows, the flowering shoots of the delphinium were carefully bent down and fixed with pegs, and thus the flowers were produced nearly on a level with those of the pelargoniums, the result being a very gay blending of the most brilliant blue with the most fiery scarlet.

The garden varieties of delphinium number about one hundred. Amongst the best of the single varieties are *Formosum*, *Madame Hock*, *Barlowi*, *Lavender*, and *Belladonna*. Conspicuous for beauty amongst the double varieties are *Madame Geny*, *Roi Léopold*, *Hermann Stenger*, *Keteleeri*, and *Azureum plenum*.





MOUNTAIN ANEMONE.



MOUNTAIN ANEMONE.

Anemone apennina.

BOTANISTS have too much to say about British plants that are possibly not British. This lovely blue anemone occurs wild in Bedfordshire, Surrey, Herts, and Berks. One writer calls it an alien, but adds that it is spread through the land from Devon to Banff, and has been long established in Surrey. This statement may be right, but it *may* be wrong, and the evil to be complained of is that positive statements are founded on negative evidence. We will suppose that long before the British islands were

separated from the continent of Europe, this anemone, with others, such as *nemorosa*, *pulsatilla*, and *ranunculoides*, had its place here, and assisted to maintain the floral connection between what is now Britain and the great lands eastwards and northwards of which it was the western promontory. The conditions may have been such that

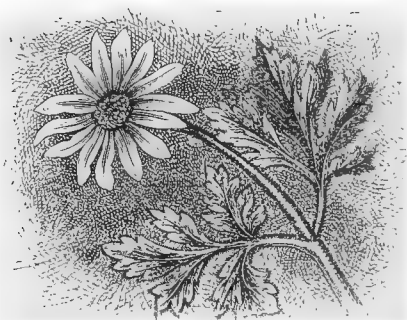
the plant was never widely spread or in great abundance anywhere, and when the separation took place it was made to appear like a waif or stray for all time to come, because it was not in force enough to assert its nationality. This is all supposition, and much of the botanical doctrine is no better. Of this we feel satisfied, that many plants have from the earliest ages obtained a hold on certain parts of these islands, but have been unable to spread themselves, and they now appear as accidents, whereas they are as truly indigenous as any vegetables known to us. Man is a terrible destroyer of plants, and at the same time a most effectual preserver and multiplier. Since he came upon this scene the vegetation must have altered much, not only as a consequence of natural changes in the climate, but of man's operations as a hunter, a forester, a farmer, and a perpetual consumer of everything eatable the earth produces. We will suppose the flowers of some particular plant to be much liked by man, by his cattle, and by wild birds and beasts. How long would such a plant last in a country abounding with animal life? It would be quickly obliterated, for it would have but few opportunities of ripening seeds. As a matter of fact, man stands almost alone as a consumer of flowers: the animals, of whatever kind, but rarely touch them; the family cow will not eat the buttercups that are said to give their colour to the butter, and the bee that sucks the honey from a flower rarely does it any harm, but rather promotes the spread of the plant by brushing the pollen from the stamens, and so causing the fertilisation which insures a growth of perfect seeds. As for man, he plucks flowers because their beauty impresses him, or because he wishes to obtain their odours and their

essences; he destroys many by draining the land, others by burning the land, and others again by clearing away the woods that certain flowers need for shelter and protection. The botanists all agree in declaring that this lovely anemone is not a native, but as they know nothing about the way in which it first obtained its foothold here, we are not inclined to accept their declarations.

The mountain anemone, or Apennine windflower, is in every proper sense of the term a rockery plant. It attains to its highest luxuriance of growth in alpine pastures, the pure air, strong light, and abundant humidity of the mountains favouring the production of large flowers of the most delightful colour. Its serrated leaves provide a soft green groundwork for the large blue flowers, which rise from four to six inches, and are in perfection during March and April, occasionally lingering on to the middle of May. Nevertheless, though loving the breezy heights, this sweet flower readily accommodates itself to the conditions of garden cultivation, and is not easily overpowered by other robust habited plants, for when established it spreads in dense tufts, and holds its own against all weather and all vegetable antagonists. As a plant for pot culture, for the frame, or alpine house, it is invaluable, because it may then be set upon the parlour table if need be, but in the alpine house it helps to make a cheerful picture with other anemones and with the drabas, the smaller irises, the erythroniums, and the primulas that flower at the same time, rendering a genuine alpine house one of the best of toys for a true amateur of the garden.

As companions of *Anemone apennina* on the rockery, the following are admirably adapted, and will afford much delight :—*Anemone blanda*, flowers deep sky-blue, larger

than those of *A. apennina*, and appearing earlier. *A. fulgens* and *A. stellata* are nearly related ; they are exquisitely beautiful, and give us scarlet, purple, ruby, rosy, and blush-coloured flowers. *A. nemorosa*, the native wood anemone, is a lovely thing, and various in its characters. We have single and double varieties ; we have them white, blush, lilac, reddish, purplish, and rich sky-blue ; and all are worthy of a place on the rockery, though they will also thrive in any good border. *A. palmata* is the cyclamen-leaved anemone, a fine plant with flowers glossy yellow or pure white. This species has both single and double varieties. *A. ranunculoides* is like the Apennine plant, but has yellow flowers. Finally, *A. sylvestris*, the snowdrop anemone, claims attention for its beautiful white flowers of large size freely produced on a groundwork of green leaves. Other more famous kinds may for the present be left to speak for themselves ; it is enough to mention here a few of the finer varieties which are not so generally known.





MEZEREON.



THE MEZEREON.

Daphne mezereum.

MEZEREON is a dwarf olive, but as the plant is not an olive, nor indeed half so useful, it is proper to add that the name is of Arabic derivation, and the Arabs named plants by their visual analogies, and not by analogies of structure. It is the *maçzeroun* of the Arabian physicians, and a destroyer of life, which the olive is not.

There is no flowering shrub in our gardens that gives us higher pleasure than the mezereon. We have indeed finer subjects (according to our notions), but when this shrub flowers, these finer things are as good as dead, because there is not a flower upon them, or even the sign of a coming leaf. To speak of the mezereon as a spring flower is a mistake. The hedgerows are bare, and the birds for the most part are silent, or dismally twittering, when the lovely mezereon is in its full glory, and most

delightful it is to see its branches studded with brilliant pink or purplish flowers—

“Ere a leaf is on the bush
In the time before the thrush.”

Nor does the performance end with this fairy tale, for the transformation scene follows, and then the leafy rods are dotted with ruddy berries, and if you come late upon the scene you are sure of something for your money. There are white flowering varieties, and we have heard of, but not seen, a double-flowering variety, the flowers of which are reported to be of the richest fiery carmine colour, and to last twice as long as the single flowers. Long duration is a proper quality of double flowers, and so on that part of the story we raise no question. It will be safe to advise the reader to acquire the double-flowering mezereon, for it must be a fine thing if it really exists. The autumn flowering variety we have long possessed, as also Fortune's (*D. Fortunei*), which has lilac flowers, which, with us, appear about Christmas.

Hardy daphnes are not numerous, and the best of them are less hardy than they should be for universal usefulness. The commonest is the green-flowered *D. laureola*, a true native, flowering in February, and a really interesting, though not showy plant. The amateur who is an amateur indeed should make a point of having a few plants of this species always in the garden, in case he should be at any time afflicted with a passion for daphnes in general. It is the species employed for grafting the finer sorts upon, and therefore, when the fit comes, one form of medicine will be ready. Having indulged at some length in such pastime, we can say that to make the

stocks and put on the grafts is easy work, and the great point is to have nice quarters ready to promote the junction and the growing. The Pontic Daphne (*D. Pontica*) is but a form of the last, with lighter-coloured foliage and later flowers. It is also employed as a stock for grafting. It should not be omitted to state that the mezereon is also valued as a stock, but *D. laureola* is the plant for the purpose.

The better class of daphnes comprise *D. alpina*, a pretty shrub for the rockery, with white or rosy flowers; *D. collina*, a smallish arboretum or rockery shrub, with blush or pink-tinted flowers; and *D. cneorum*, a half-trailing shrub, possessing the finest qualities, and much to be desired in every well-kept garden. It is a true ever-green of neat growth, producing lovely rosy flowers, that are exquisitely fragrant early in the spring. For the dressed grounds this is a foreground gem, and hardy enough for any good garden south of the Trent, and for any garden north of the Trent if on the west of the great backbone that divides the hard from the soft climates of England.

Amongst the greenhouse daphnes the most important is the sweet *D. odora*, of which there are several varieties, pink, white, and variegated-leaved. *D. Indica*, with white flowers, *D. japonica*, with pink flowers, and *D. Blagayannum*, with yellow flowers, are worthy of attention. In places specially favoured by climatal conditions *D. odora* is hardy, and one of the finest out-door shrubs in the world. But generally speaking it is not hardy, and needs the shelter of glass.

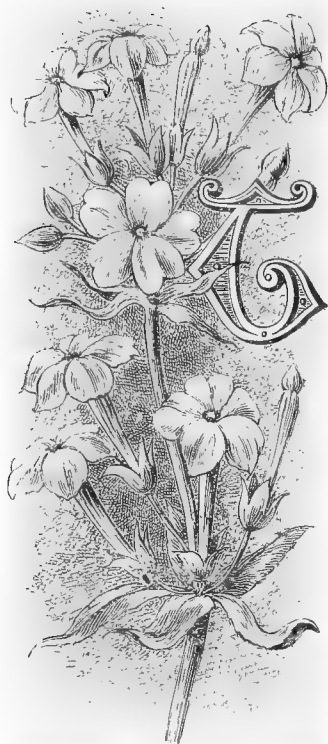
It is better for the amateur to buy than to propagate daphnes. The seed requires two years to germinate under

the best of management, and under any other management it does not germinate at all. The grafting, as above remarked, is an easy task, but success depends on having at command a warm pit to promote the junction. As for soil, the mezereon and the laurel daphne prefer loam; all the rest require peat.





ABYSSINIAN PRIMROSE.



ABYSSINIAN PRIMROSE.

Primula verticillata.

HIS interesting plant reminds one of the handsome Japan primrose (*Primula Japonica*), by the manner in which the flowers are produced in a series of whorls; but the snowy primrose (*P. nivalis*) has the like habit, and some others indicate that a very slight change of conditions would induce them to present their flowers in a spiral arrangement, instead of a simple umbel. The Abyssinian primrose was first received in this country in the year 1825, under the name of *P. involucrata*, and was first

figured in the *Botanical Magazine* in the year 1828, under t. 2842. In its original form it was a somewhat poor plant, with small flowers borne on long pedicels amidst a profusion of floral bracts and with conspicuous green calyces. Its native country was the Arabian province of Yemen, on the margins of rivulets on Kurma, a calcareous mountain in north latitude fourteen and a half degrees, that is, towards

the southern extremity of Arabia Felix. A much improved form—considered from the floricultural point of view—was introduced by Messrs. Veitch and Son, of Chelsea, in the year 1872; this first flowered on the rockery at Kew in the year 1873, and was figured by Sir J. D. Hooker in the work cited above, under *t.* 6042. This later introduction is called *Primula verticillata*, *var. sinensis*. It is of robust habit, producing a whorl of oblong leaves, from the centre of which springs a stout flower-stem, bearing one, two, or three distinct whorls of flowers, which are larger, more richly coloured, and on shorter pedicels, with inconspicuous calyces, and therefore distinct from those of the earlier form, and considerably handsomer.

Collections of primulas are in request for rockeries, and although a few of the sorts need special and peculiar treatment, a considerable proportion of the most useful species readily conform to one simple system of cultivation. The vigorous-growing kinds require a deep sandy soil, always moist, and some amount of shade from the midday sun in the heat of summer. There is no primrose known to our gardens that can with impunity endure drought as a sempervivum or sedum can; all primroses suffer if much roasted by sunshine, and a shallow, poor soil will but rarely afford any of them a suitable root-hold. On the other hand, most of the diminutive species bear full exposure without harm, provided their roots have the advantage of a deep, moist bed. It is advisable, when collections are planted on a rockery, to associate them in groups as nearly as possible, so as to subject them to uniform treatment, and thus insure regular attention. When dotted about in places distant from each other, a few may be forgotten at times when extra attention is required. During

dry hot weather water should be freely bestowed upon them, and this is more effectually accomplished when they are planted in groups than when they are distributed over a considerable space as isolated plants.

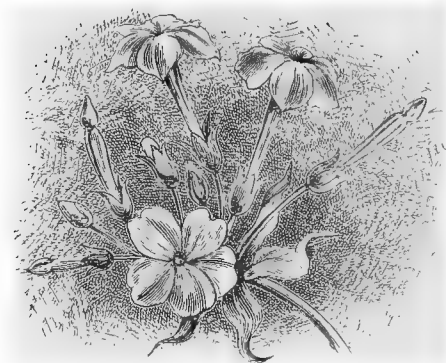
Amongst the more desirable of primulas for a rockery may be named *P. auricula* in its original wild form; *P. capitata*, in the way of *P. denticulata*, *P. furcata*, *P. integrifolia*, *P. latifolia*, *P. marginata*, *P. purpurea*, *P. rosea*, *P. cilliosa*, and *P. verticillata* in its varietal form of *sinensis*.

The finest of the hardy border primulas are *P. Japonica*, a truly grand plant adapted for planting in masses; *P. Sieboldi*, which supersedes the old and much favoured *P. cortusoides*, and finally the varieties of our own native *P. vulgaris*, which are much less known in gardens than they deserve to be. All these primulas which we select for the border are suitable also for rockeries, but they are not, in a strict view of the case, rockery plants; and, moreover, to enjoy them thoroughly, they are needed in quantity, repeated and repeated in all the variety possible, from the lovely double white and crimson primroses to the rich gold-laced polyanthuses.

In the routine cultivation of primulas, the raising of stock from seed is a matter of considerable importance. All the kinds may be multiplied by division, and in the case of double varieties that do not produce seed, this is the only course of procedure possible. But division should never be resorted to if seed can be obtained, for large specimens are always to be desired, and a vigorous progeny may be best secured by resorting to seeds.

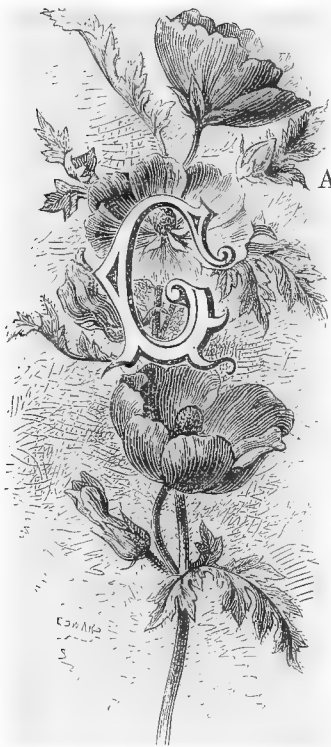
The seeds of primulas may be kept until the spring following the season that produced them, but no longer, for

they soon perish. The best practice is to sow the seeds as soon as they are fully ripe, and unless the quantity be considerable, they should always be sown in pans or boxes, and kept in frames until the young plants have made some progress. It is of the utmost importance to keep the soil in which the seeds are sown constantly moist, for if dry for any length of time a considerable proportion of the seeds will perish. It matters not how rare or how common the sorts may be, this rule must be strictly followed, or success will not be achieved. As regards the general management, it must be kept in mind that these are hardy plants, and require light and air, except at times when severe winter weather compels one to keep the young plants sufficiently sheltered to be safe.





MINIATURE MALLOW.



MINIATURE MALLOW

Malva Coccinea.

ARDEN mallows afford us suggestion of the place that many mallow-worts occupy in the world of art. They are at once peculiar and beautiful, but they make no special appeal to us until we follow the good old plan of taking some knowledge to school with a view to add to its store, for such as go empty are but too likely to come empty away. We have but few garden mallows; and we may venture to add that the world has not very many. But a certain proportion of them are of great importance to the human race. The marsh-mallow

(*Althæa officinalis*) is known to be emollient and demulcent, but it is not known as an article of food in this country, although in the East it is commonly eaten, and is much valued. The common hollyhock (*Althæa rosea*) is known for its beauty, but it is of importance as a plant yielding an abundance of fibre and a blue dye equal in

quality to the best indigo. The hibiscus is a mallow, and in India is grown for its fibre, which is called "Ambaree hemp." The edible hibiscus (*Hibiscus esculentus*) is cultivated as an article of food in many of the warmer regions of the earth, and the seeds have been used as a substitute for coffee. The celebrated "pepper-pot" of West Indian cookery owes its peculiar attraction to the seed-pods of this species, which are largely used in preparing it. The sida and the abutilon—genera that may be said to be scarcely distinguishable—are, like so many other mallow-worts, productive of fibre of great strength and the most silky texture. The amateur when enjoying his greenhouse may therefore look to his beautiful abutilons, with their fresh green leaves and bell-shaped flowers, and calculate their money value for the loom or the rope-yard. The consideration need not destroy the poetry, for that can be re-established by studying the relations of the flowers to the true and undoubted mallows. Finally, and omitting many other uses of the mallows, the cotton-plant (*Gossypium herbaceum*) is a mallow of great beauty, and possessed of a history that has yet to be written. Should the future historian of the plant take notice of these humble pages, he will find here a reminder that may be of some value. It is a fact of peculiar interest, and one that carries a cream of humour in the story that embodies it, that cotton has been grown for the manufacturer in this country, and the fibre proved to be of the highest quality. The wealthy and public-spirited Mr. Sam Mendel, formerly of Manley Hall, Manchester, carried out the experiment, and possesses in the concrete the results of the manufacturing process. The details will be found at length in the *Gardeners' Magazine* of December 16, 1882.

The grandest of the garden mallows are the well-known *Lavatera arborea* and *L. trimestris*. These are beautiful plants, the first-named being the bold tree-mallow which is so often seen near the sea-coast—a plant occasionally grown as fodder for cattle. There has been lately introduced to cultivation a fine variety with variegated leaves, which makes a stately figure in the flower-garden. Our pretty musk-mallow (*Malva moschata*) is perhaps the best of the native species, because of its neat habit; but the wild and daring woodland mallow (*M. sylvestris*) and the round-leaved sprawling mallow (*M. rotundifolia*) are, as wildings, glorious, and quite admissible to the sunny parts of a wild garden, to make bold blotches of colour amongst the rougher kinds of herbage. To recommend them for the flower garden proper would be as flagrant a violation of good taste as the introduction of a Bornean cannibal in his costume at an “at home” in a fashionable drawing-room.

Plants of smaller growth and with various pleasing features are to be found in this family. *Malva mauritanica*, *M. lateritia*, and *M. crispa* constitute a group of useful border and rockery plants. *M. diraricata*, *miniata*, and *Creeana* are beautiful examples of typical mallows, of smallish growth, producing beautiful flowers, but of doubtful hardiness. The bell-flowered mallow (*M. campanulata*) and Moren’s mallow (*M. Morenii*) are much to be desired for the rock garden, being hardy, showy, and of free growth. They need a well-drained soil and a sunny situation, and having these aids, will take care of themselves.

To raise plants of any of the foregoing, the simplest method is by means of seeds. These should be sown in pans or boxes in the spring, and have the shelter of a frame until the plants are somewhat advanced, after which

time the ordinary treatment of seedling herbaceous plants is all they require. But they may be raised with facility from cuttings, which should be made from the young shoots when these are nearly full grown. If planted firmly in sandy soil, and covered with a hand-light, the cuttings will soon make roots, and with a little care may be grown to a useful size for planting out.

The plant figured was raised by Mr. George Penny, of Milford, who named it in honour of his friend Mr. Cree, of the Addlestone Nursery. It is nearly related to *Malva miniata*, and equally so, perhaps, to *M. divaricata*. It is a suitable plant for a sunny part of a rockery, and to insure keeping it a few surplus plants should be raised annually and wintered in a frame for planting out. Its place in the *Botanical Magazine* is t. 3698.

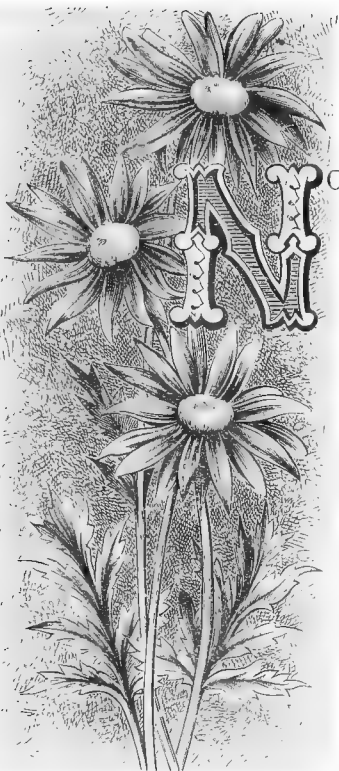




SHOWY FEVERFEW,

SHOWY FEVERFEW.

Pyrethrum roseum.



ONE of the familiar garden flowers has a better claim on our regard than the rosy pyrethrum. It may be pronounced at once the best flowering plant known for gardens in towns, and nearly one of the best for gardens in the country. The rosy pyrethrum, or showy feverfew, as the plant is perhaps more frequently called, is perfectly hardy; it is so neat in growth that it is ornamental when not in flower, and it will thrive in any soil or situation, provided it obtains a reasonable amount of light. But good condi-

tions tend to good results, and to have a nice bloom of pyrethrums a little care must be taken with the several preliminaries.

First, then, for the bed or border. This should be good loam deeply dug and liberally manured. The plants

may be put in at any time that may be convenient, but the spring and the autumn are the best times to plant, a supply of the finest named varieties in pots having previously been secured. When first put in the ground a sharp look-out must be kept to protect the plants from slugs and wood-lice, but when the plants have begun to grow freely in the open ground these marauders will not care much about them. As the spring advances the flower stems will rise, and you will have to determine whether to support them or not. A neat way of supporting them is to drive in three stakes and pass strips of bast loosely round to form a kind of open cylinder. This must be neatly done, so as to be scarcely visible, leaving the growth somewhat free. We have a large collection, comprising all the named varieties, and we never give support to any, but let them fall about as they please. This plan answers well when the weather is fine, and the display is delightful. But bad weather makes a difference, and then, we must own, the plants that are properly supported fare the best. In some gardens pyrethrums die out in three or four years; in others they appear to defy time and death, and last any length of time. It is a good practice, however, to take them up every third year, and deeply dig and manure the soil; then divide, and replant. A still better practice would be to plant in fresh soil altogether; for continuous occupation of the same spot, even if periodically dug and manured, tends to deterioration.

The best time of year for lifting and dividing is August or September, and it will be prudent to pot a few small pieces of all the best varieties, and keep these potted plants in a frame during the winter, to plant out in spring. It is just possible that a severe winter may kill a few

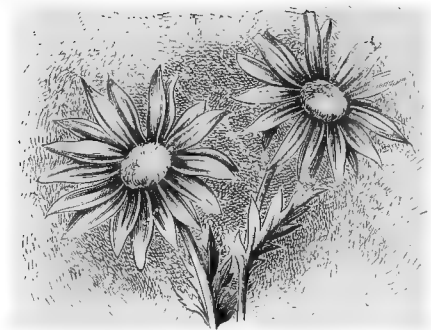
of the plants that were disturbed in the autumn, in which case the potted plants will be ready to take their place.

In the cultivation of pyrethrums there are one or two points of considerable importance. In the first place, when very young plants are put out in the mixed border they are liable to be injured, if not quite destroyed, by digging or other operations during the winter, as they retain but few leaves from November to February. In the next place, they like a strong rich soil, such as will retain a fair proportion of moisture. They are furnished with innumerable small roots; therefore the soil should be broken up fine to a good depth. Newly-purchased plants are generally small, and it is much better to plant them in a well-prepared bed in the kitchen garden for a year or two, to give them a good start, than to put them in the flower border. Keep the soil about them free from weeds, and supply frequently with liquid manure. If they are in a well-drained soil they will enjoy a rather large supply of water, and, so far as growth and the number of flowers produced are concerned, a dripping time through the months of May and June is eminently favourable to them. Overcrowding must be avoided, as pyrethrums produce so many roots that they exhaust the soil for some distance. Large examples ought to be at least thirty inches apart each way, and when allowed this space they will, if the soil is in good condition, produce from thirty to fifty flowers of fair average quality.

Pyrethrums produce seed freely, and very often crowds of seedling plants appear around the old stools. It is advisable to cut off the flowers as fast as they fade, and so prevent the growth of seed; but if seed be wanted it is

easily obtained, and the best way to treat it is to sow as soon as ripe, and give the seedlings frame culture through their first winter, and plant them out in March or April.

The following are the best twenty-four varieties, single and double :—Achille, Aurora, Ceres, Captain Nares, Dr. Livingstone, Émile Lemoine, Floribundum plenum, Gustave Heitz, Hermann Stenger, Haage and Schmidt, Iturbide, La Vestal, Lady Derby, Michael Buchner, Monsieur Barrall, Mont Blanc, Nancy, Ne plus Ultra, Peau Rouge, Placida, Solfaterre, Striatum plenum, Uzziel, White Aster.

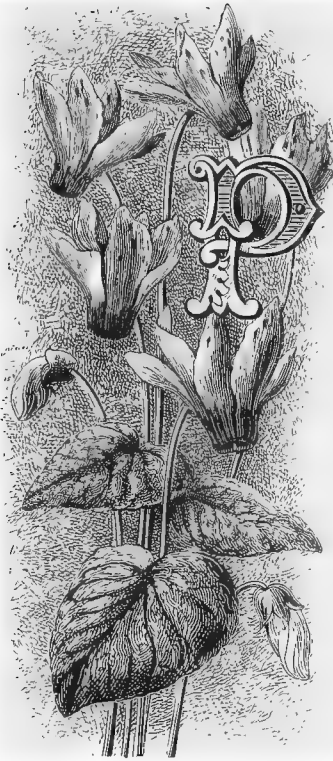




PERSIAN CYCLAMEN

PERSIAN CYCLAMEN.

Cyclamen Persicum.



PERSIAN sowbread is not often put to the use the name suggests for it, but if the pigs had access to the florist's treasures, they would no doubt appreciate the flavour of the round corms or bulbous roots of the cyclamens. It would be a veritable case of casting pearls before swine to permit the experiment, and it is more agreeable to confine our attention to the flowers and give no further thought to the possibility of converting the roots into mild pork. Although introduced at least as early as the

middle of the eighteenth century, this must be regarded as quite a modern plant, for its proper cultivation may be spoken of as a recent discovery. It was the settled custom of gardeners to give the plant careful frame cultivation until it flowered, and then to "dry it off" and

neglect it for some months, when it was again taken care of, in due time flowering again, unless, as often happened, it died through being forgotten. The consequence of this treatment was that its beauties were never fully developed, and there is some evidence of the poor state of the plant in the figure of it that appears in the *Botanical Magazine* in the year 1788 (*t.* 44). When the right way to cultivate the plant was discovered, a wonderful change took place; the flowers were enlarged in size, they became richer and more various in colour, more deliciously fragrant, and their profusion became a matter of astonishment. It is quite a common event to see Persian cyclamens with from fifty to a hundred flowers, all fresh and perfect, and we once saw a plant that must have had at least five hundred blossoms; it was presented at a meeting of the Floral Committee of the Royal Horticultural Society by Mr. Wiggins, on the 12th of February, 1884. That plant was at least seven years old, with a corm nearly as large as a baby's head. To grow such a plant is not exactly an easy task, but we shall describe the routine, and it will be at the discretion of the amateur to follow it, whether for the production of neat little plants or for giants of high renown.

It is of the utmost importance to begin with good seed. The best time to sow it is as soon as it is ripe, which will be in June or July. Sow in pans filled with a mixture of equal parts peat, loam, and leaf-mould, with silver sand added to cause the mixture to feel gritty between the fingers. The compost must be well chopped up and mixed, but must not be sifted; and the seed must be very lightly covered. A temperature of 75° Fahr. is required to get the seed up nicely, and a cucumber house

is the best place for the seed-pans because of the atmospheric humidity.

When the young plants appear the pans should be removed to a cooler position where there is abundant light and air. The little plants will grow freely if regularly watered and protected against any sudden changes or extreme conditions. Be careful not to give too much water, for that will render the soil sour, and put a stop to healthy growth altogether. As autumn approaches the growth will cease, but the plants must be kept under glass in a frame or greenhouse, and they ought never to be in a lower temperature than 40° Fahr., even when quite at rest.

In October or November take out the little corms and pot them separately in small pots, using the same kind of compost as before. Now put them in a warm house, and they will soon begin to grow again, a temperature of 55° to 60° Fahr. being most suitable for them. They must be kept near the glass and have air at all favourable opportunities. Thus they will pass the winter, making a nice growth, and as spring advances they will go to rest. From the end of April until the end of August a cold frame in a somewhat shady situation will suit them better than a house, but care must be taken to protect them from cold winds and from all extreme conditions.

At the end of August they must be shifted into pots of five or six inches diameter. They should never have larger pots than they are likely to fill with roots pretty quickly, for if the soil become sour the plants will not thrive. For this potting prepare a compost of equal parts turfy loam, fibrous peat, and fresh dry horse droppings, with sufficient silver sand to lighten the

mixture. A half part of sand will probably be needed. Replace in the cold frame and let them remain there about a month, and then transfer to the greenhouse. A temperature of 50° Fahr. will suit them well; let them be near the glass, and give air at every favourable opportunity. They will flower grandly and compensate you for your trouble.

When the flowering is over let them go to rest, but do not distress them in any way, and take care they never become dust dry. When they have rested about a month repot them, and take care in doing so to remove all the old soil without doing any injury to the roots. When you have acquired some experience you may assist the bloom with liquid manure; but a beginner should not venture on this course, for the cyclamen is not a gross feeder, and a good bloom may be secured without the aid of any stimulant.



